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ABSTRACT

During 1972-1973, the Commission on Youth Education in Environmental Conservation for the State of New York sponsored a series of six regional conferences. They were designed to explore needs and solutions in environmental education at the regional level, demonstrate the concept of total community involvement in environmental education, and develop some preliminary models for its implementation. This volume contains the full reports of these conferences as created collaboratively by the regional participants and the Commission staff. It provides comprehensive evidence both of the organization and functioning of these meetings and the outcomes they produced. Conferences were titled: Seminars for Regional Resource Development--Adirondack Region; Education for Environmental Action Conference--Albany; A Report on Regional Environmental Education and a Plan for Its Future in Central New York; A View Toward Community-Wide Environmental Education for the Genesee/Finger Lakes Region; New York Forum on Funding for Environmental Education; and Southern Tier Central Regional Plan for Environmental Education. A regional design was utilized because the variety of physical environments and social institutions in the state lead to varying degrees of need and, thus, discourage statewide application of highly specific programs. A related document is SE 016 252, the Commission's main report. (BL)

ED 077716

TEMPORARY STATE COMMISSION

ON

YOUTH EDUCATION IN CONSERVATION

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
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SUPPLEMENT TO THE

THIRD REPORT

TO THE

GOVERNOR AND LEGISLATURE

ON

CONSERVATION EDUCATION

APRIL 1973

SE 016 253

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ACKNOWLEDGEMENTS

During the winter of 1972-73, the Commission on Youth Education in Environmental Conservation sponsored a series of six conferences which were unique in the state. Inspired by two public meetings held by the Commission in the Niagara frontier and in Long Island the previous year, they were designed to explore needs and solutions in environmental education at the regional level and develop some preliminary models for its implementation. This volume contains the full reports of these conferences as created collaboratively by the regional participants and the Commission staff. The reports appear in condensed form as an appendix to the Commission's third report. Despite severe time constraints and the relative complexity of planning, conducting and evaluating these meetings, they were remarkably productive in generating widespread enthusiasm among participants as well as some very concrete beginnings to regional program development.

The significant progress made by the Commission under often difficult circumstances could not have been realized without the constant support and service of a great many skilled and hard-working citizens. To the professional educators and conservationists, the spokesmen for regional interest groups, the diverse support personnel and the meeting participants themselves, the Commission extends its most sincere appreciation and thanks. Because of their unstinting, generous and willing response, the work of the Commission exceeded both its quantitative and qualitative expectations. The roles of youth and of those who are continuing the work initiated by these meetings are to be particularly noted and commended.

The Commission also recognizes the contribution made by Community Resource Development Specialists of the New York Cooperative Extension for their unreserved assistance, especially in early planning for the regional meetings and in the identification of key community leaders whose involvement assured the meetings'

subsequent successful outcome.

Several institutions provided primary local assistance in assuring the success of all phases of the regional meetings and in follow-up and reporting on their findings. They are:

Central New York
The Environmental Management Technical Advisory Committee of the Regional Planning and Development Board

Genesee-Finger Lakes
Monroe County Cooperative Extension

Southern Tier
College Center of the Finger Lakes

Adirondacks
The Miner Institute

Special tribute is due those who served on the committees and acted as spokesmen for various interest groups in planning and producing the regional meetings. Their superlative efforts furnished the insights and evidence presented in these reports which, in turn, constitute a major basis for the Commission's recommendations formulated in its Third Report to the Governor and Legislature on Conservation Education of April, 1973. It is a pleasure to acknowledge these individuals by name for the invaluable contributions they have made:

Estelle Avery
Walker Banning
William Berberet
James Dunn
William Lawrence
Richard Robinson
Bruce Schwartz
Paul Turner
Chloe Wacenske
Elliot Willensky
Lois Wilson

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## INTRODUCTION

At its November 10, 1972 meeting, the Commission on Youth Education in Environmental Conservation charged the newly appointed staff with organizing and conducting six regional meetings that would demonstrate the concept of "total community involvement" in environmental education. This decision arose from evaluations of need made by the Commission in its immediately previous year of functioning and from the leadership of its chairman, Senator Bernard C. Smith, who strongly advocated this concept as being both timely and realistic.

In its companion volume, the Third Report to the Governor and Legislature on Conservation Education, reports of these six regional meetings has been summarized and included as an appendix. This supplemental volume, by presenting the reports in their entirety, provides much more comprehensive evidence both of the organization and functioning of these meetings and the outcomes they produced.

The Commission's regional meetings were conducted by its co-directors, Dr. Eric E. Beamish and Dr. Harlan B. Brumsted, in cooperation with Commission staff and regional leaders.

From its work in previous years, the Commission had come to recognize that the variety of physical environments and social institutions in New York State lead to varying degrees of need and discourage the statewide application of highly specific programs. Where population density is high, the structure of the social system creates a potential for communication among people which does not exist in more rural settings. Likewise, the communication's media are more available and accessible for informing and influencing mass audiences and for presenting community environmental issues. In more populous areas, people and resources are more abundant and diverse and can be readily inventoried and organized for specific educational purposes and uses. Highway systems and mass transit also favor urban areas by allowing rapid and frequent

access to central meeting places, thereby facilitating continuity and persistence of effort in program planning and implementation. The urban setting is not, however, consistently more successful in pursuing its environmental education goals than are the more sparsely settled areas of the state. Its very complexity often sets up competing and conflicting forces that render development ineffective and nullify the beneficial effects that existing programs would otherwise have.

These characteristics, well-documented in the literature of sociology, point out the need for tailoring any attempt at environmental education statewide to recognize and respond to the expressed needs and limitations of the people involved. They also help explain why regions with similar kinds of environmental problems may have different levels of environmental awareness.

In urban areas, where decreased quality in the environment due to industrial and other pollution has been perceived directly by the people living in the area, action programs in environmental education are already underway. Often the principal need in these areas is for ways of continuing the level of activity and sustaining programs.

Where the effects of decreased environmental quality are not as obvious, educational efforts must often be directed toward beginning the planning or design phase or toward creating the level of awareness that is necessary before any action can take place.

It was with these considerations in mind that the Commission co-directors, Dr. Eric E. Beamish, formerly of the Central Administration of the State University of New York, and Dr. Harlan B. Brumsted of the Department of Natural Resources, New York State College of Agriculture and Life Sciences, Cornell University, began their work in December, 1972.

Dr. Brumsted followed the approach demonstrated successfully by the Commission during its June, 1972 public meeting on Long Island. For the Long Island meeting, a focal group of active and recognized leaders in environmental education was organized to plan a

program which would eventually involve representatives from education, conservation, citizens groups, local government, business and labor in a public forum. This meeting and a similar one held at Niagara Falls in March, 1972, are now seen as the genesis of the Commission's emphasis on "total community involvement" in environmental education.

Throughout his efforts, Dr. Brumsted held to the philosophy that the entire process should be internalized within the regions; that is, while the Commission could act temporarily as a sponsor and supporter, plans and programs had to be products of regional efforts if they were to test the concept adequately and serve as viable bases for further action.

To facilitate meaningful program development, Dr. Brumsted involved participants from within three planning and development regions, as defined by the State Office of Planning Services, where the Commission had not previously held hearings. These regions offered established communications and inter-governmental ties, as well as distinct economic integrities. The Central New York Region covered Syracuse and the counties of Cayuga, Cortland, Madison, Onondaga and Oswego; the Genesee/Finger Lakes Region included Rochester and the counties of Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne and Yates; the Southern Tier Central Region included Elmira, Corning and the counties of Chemung, Schuyler and Steuben.

These meetings were organized by bringing together a small group of recognized environmental education leaders to plan, publicize and produce the event within their respective regions. Dr. Brumsted met continuously with all three steering committees to guide their efforts and assist in making detailed arrangements. At each site, meeting plans recommended by the steering committees were referred to a review panel of 25 to 35 people representing diversified interests from throughout the region for a final round of comment and suggestions.

While each of the western meetings was tailored to interests and opportunities within the region, they

shared some common elements. For example, all were about seven hours in duration; involved spokesmen from the six sectors of the community being emphasized (business, labor, education, conservation, citizen groups, local government); provided opportunity for small group discussion; included a luncheon or dinner, providing an opportunity for informal mixing and conversation. A total of 550 people, representing the target sectors in all 16 counties of the three regional communities participated in these meetings.

Reports from the western meetings, as published here, were produced under the leadership of institutions or agencies prominent in organizing the meetings themselves. Dr. Brumsted guided the report writing processes, steering them toward development of preliminary regional plans for environmental education. Individuals and small committees drafted segments of the reports, then submitted them to larger review panels for study and revision.

Meetings in the eastern half of the state, coordinated by Commission Co-Director Eric E. Beamish and staff members Jonathan Bart and Connie Komarek, were designed to accommondate regional differences by varying meeting formats and by exploring environmental education at a level of sophistication appropriate to each region.

In the Northern New York area, consisting of Essex, Franklin, Warren, Clinton and Hamilton counties, an extensive series of meetings, culminating in two public forums, was held. The Commission's approach took account of the greater difficulty of travel and communications in this sparsely populated region and also recognized that environmental problems in the area had not yet begun to impinge severely on the residents' quality of life. Through intensive large and small group discussions, the Commission hoped to identify interested individuals in the region, put them in contact with each other, provide them with a preliminary list of available resources and encourage them to work together to meet their common environmental education needs.

In Albany, the state headquarters of the New York State United Teachers Union, a two-day conference, coordinated by Marguerite J. Walters, focused on the role of the school in total community involvement programs. While representatives of business, local government, conservation and citizen groups were actively involved in the conference, the format stressed ways in which these groups could work more effectively with teachers, students and school administrators. Environmental education specialists from throughout the state were on hand to offer expert advice on how plans made at the conference might be translated into action.

The New York City forum, which again brought together representatives of the six major community sectors, had to deal with both the more complex environmental problems and the greater potential resources available in a highly urbanized area. Preliminary investigations by Kristen P. Bergfeld indicated that in many instances good environmental education programs were already in existence and that a principal need was for ways of continuing and expanding these programs. For this reason, the New York City forum focused on the ways financial support for environmental education programs might be obtained.

Summaries of the proceedings at the six Commission-sponsored regional meetings follow. Altogether citizen leaders and professionals from thirty of New York State's sixty-two counties participated in these regional meetings. Their efforts have produced records of environmental education programs that are already planned or underway in their region and have revealed strong evidence of what still needs to be done. Their work challenges leadership in the involved counties to implement what already has been planned or initiated. It also encourages and furnishes ideas and patterns for further development and implementation of environmental education in the rest of the state, regardless of its present local status.

These reports provide documentation of what some communities were able to do, in a very brief time, to

illumine progress, needs and solutions in environmental education for their respective regions. In a very real sense, they can provide any community or given sector in the state with rudimentary models of what it might similarly do, both to initiate interest and action in environmental education, and to place presently functioning programs in some truer perspective.

For the full import and impact of these reports on planning and recommendations for a statewide environmental education program, the reader is referred to the Commission's main report of April, 1973.

SEMINARS FOR REGIONAL RESOURCE DEVELOPMENT

ADIRONDACK REGION

January 15, 25, 1973

February 15, 26, 27, 1973

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## PREFACE

The series of meetings held in the Adirondack region of New York State between January 15 and February 27 were designed to bring together a diverse group of people concerned with the growth of environmental education in the five-county region consisting of Clinton, Essex, Franklin, Hamilton and Warren counties. This supplemental report gives a full account of these meetings and their major outcomes and provides further elaboration on the mechanics of the meetings themselves, the environmental education resource inventory produced as a result of these meetings and the status of environmental education in the five-county region.

As a part of its sponsored activities, the Commission, in response to requests of the local participants, had a comprehensive inventory of programs and resources for environmental education in the region prepared by Irene Guibord, a Plattsburgh journalist. As is the case with all inventories made of a rapidly expanding and changing field, some people or resources may have been unintentionally overlooked and major new programs may have developed after the research phase of the inventory was concluded. The Commission believes that the comprehensive inventory which Mrs. Guibord prepared is the first such document ever attempted in the five-county region and, as such, should serve as a valuable tool for all sectors of society wishing to gain an appreciation of the range of environmental education activities now being undertaken in the region.

Since environmental education is particularly important in the school context, a special synopsis of school programs in the region has been prepared from the inventory. This synopsis follows abstracts from the inventory itself.

The Commission regrets that the entire inventory could not be included due to budget limitations. However, copies are available free of charge from Mr. William Lawrence, Vice President for Academic Affairs, Miner Institute, Chazy, New York 12921.

## ADIRONDACK MEETINGS

### THE REGION

The five counties of Hamilton, Franklin, Warren, Clinton and Essex, which were represented at the Commission's Adirondack meeting series, are characterized by a largely forested landscape, a low population density and an abundance of natural resources. Much of the region falls inside the Blue Line of the Adirondack Park. Within this boundary, uses of state-owned land are strictly regulated and future control of privately-owned land seems assured. Residents and property owners within the Park are concerned about outside intervention, particularly when "environmental interests" may interfere with the highly valued rights of the individual to plan his life and use his property.

Idea exchange and coordination of activities and resources are difficult throughout the region. Transportation and communication systems were not originally designed to service residents of the outlying areas, and even today the spheres of influence of the small urban centers do not extend far beyond their borders. Environmental activities are often initiated to solve specific local problems and satisfy individualized interests. Duplication of effort and less than optimal levels of program development often result from this isolated activity.

Environmental concerns take second place to economic necessity in the low-income areas of the region. The tourist industry is expanding each year as more people come to the area pursuing recreational activities. Tourists create a demand for goods and services and bring needed income to the area. At the same time they place real stresses on the region's environment. From the High Peaks Wilderness to Canada Street, Lake George, the tourist trade is posing serious questions for local residents.

Despite the handicaps, there seems to be a growing recognition that environmental problems and their solutions are remarkably similar throughout the region.

This realization has sparked new efforts at better coordination within the region. Continuing economic problems, however, require multi-community or regional cooperation. Coordination of such efforts is still needed through central information referral centers if dissemination of information and provision of environmental advisory services is to be realized.

MEETING FORMAT

Early discussions with environmental educators of the region established three basic objectives for initiating total community involvement in environmental conservation education. These were:

1. To establish basic communication among interested and involved people from the region.

2. To locate and assess resources for environmental conservation education in the region.

3. To initiate the first stage of planning for environmental conservation education within the participating counties as well as within the entire region.

These relatively basic objectives were set for the conference sessions in response to a locally-derived assessment of the present status of environmental conservation education in the region. The Commission hoped that by going through these preliminary steps with residents, it might motivate some participants to carry out design and implementation on their own. Several groups, organized as a result of the meeting series, are now pursuing action programs in environmental education.

A series of three meetings was held at the Miner Institute, Chazy, New York to achieve these objectives. The first meeting was devoted to training a small group of regional leaders to work with participants in subsequent meetings. A panel of Adirondack experts gave an overview of the ecology, cultural geography, politics, and environmental problems in the region. This was followed by a review of objectives for future meetings and a question and answer period.

A full day working meeting on January 25 centered on large group presentation/discussion sessions interspersed with workshops. Regional concerns were discussed in the large groups while small group discussions focused on objectives appropriate to the individual participating counties. Three weeks elapsed between this session and a half-day session on February 15 to allow for "back-home" planning by the county groups. The activities and recommendations of county groups were reported back to all participants at the February 15 meeting. Their findings were then synthesized in an attempt to define the "state of the art" in the region. Both individual plans of the county groups and the embryonic model for the region were presented at two public hearings held at Chazy and Lake George on February 26 and 27, respectively. At that time, wider regional comment and input were sought.

In conjunction with the meeting series, a preliminary inventory of resources for environmental education was prepared under the Commission's auspices by Plattsburgh journalist Irene Guibord. It is believed to be the first such listing ever compiled for the five-county region. In preparing the inventory, more than six hundred individuals and organizations within the region were contacted in person, by phone or by mail. They were asked to describe environmental education programs underway or planned, to point out problems in the field, to identify useful resources and to provide sample materials if available.

The information collected has been indexed by program or resources for individual counties and/or the region. Programs are divided into three basic kinds: school, community organizations and industries. Resources are identified as people, facilities, materials, field trip possibilities and general resources. It is hoped that copies of the inventory can be made available to all potential users. The actual materials collected have been deposited at the Miner Institute where they are accessible to the public.

In the time at the Commission's disposal the preparation of the inventory provided the most realistic

and productive way of assessing existing programs and resources in the region. At the same time its creation gave the region its first comprehensive guide to programs and resources, providing a tool of recognized value for present and future planning.

PARTICIPANTS

Regional leaders from industry, business, government, agriculture, civic groups, education and the non-teaching scientific community attended both the initial workshop leaders meeting and subsequent sessions. They represented the main public and private interests in the five participating counties. The education director of Miner Institute, Dr. William Lawrence, and the director of the Man and His Environment program, Dr. William Berberet, performed a major leadership function throughout the conference.

The meetings attracted proportionately large representation from public education and conservation organizations. Others who took an active role were representatives of major paper companies, several planning board representatives, town and county supervisors and Assemblyman Andrew Ryan.

EXISTING PROGRAMS

From a preliminary assessment of programs in the five-county region there is evidence that environmental conservation education is becoming part of the school curriculum. Although most schools report no formal environmental education courses being taught, the environment is a primary topic in many sciences, social studies, mathematics, health, English and home economics courses. As one teacher stated, "No one teaching in the Adirondacks can overlook the importance of conservation, game laws, fishing limits and refuges."

BOCES appears to be a primary agent for educational programs in environmental conservation. In the Clinton-Essex area, the Board offers a two-year occupational training program for 11th and 12th grade students using facilities of the school forest land, state parks and the Georgia Pacific pulp and paper mill. In the southern

part of this BOCES district programs are offered in fields such as recreation, logging, pollution control, wildlife management, nursery practices and silviculture.

It appears that the elementary school program is generally more adaptable to teaching environmental education because of the greater possibility of flexible scheduling to allow for frequent field experiences. Many middle and high schools are also experimenting with outdoor education programs,however.

The Peru Central School provides a variety of field trips for sixth grade children to study the principles of ecology, wildlife management, environmental practices and soils and plants. The Peru Parks and the Macomb Reservation are used year-around as outdoor study areas for science and social studies classes. Both the local conservation officer and the Lions Club have provided significant assistance to this school district.

Ticonderoga Central School and Schroon Lake Central School have developed special units in environmental education for their elementary school classes. Minerva has an outdoor education program, K-12, for some 300 students. The school employs a supervisor of outdoor education and conducts special spring and fall programs in its outdoor laboratory.

Brushton-Moira Central School in Franklin County includes two 20-week courses, one in ecology, the other in conservation, in its curriculum. The ecology course for grades 10-12 deals with ecosystems, ecological populations and communities, and current issues with special focus on the Adirondack Land Plan. The conservation course for grades 9-12 emphasizes such topics as soil conservation, wildlife management and local pollution problems.

Indian Lake Central School in Hamilton County involves some 300 students in grades 4 through 12 in a conservation and ecology program which is part of the health, geography, science and English curriculum.

In Warren County, the Glens Falls City School District offers one-semester courses, grade 11, on man and his environment and in advanced ecology. Special speakers, audio-visual materials and field trips are used in conducting this program.

Citizens groups in the region, especially in the university community of Plattsburgh, have periodically tackled environmental problems - - investigations of water quality in Lake Champlain; recycling projects; land-use evaluations. Public education has often resulted from these projects.

As a result of Commission meetings several additional projects were designed and planned. A number of these are now in the early stages of implementation. The Piseco Elementary School in Hamilton County is organizing a student exchange program with Eagle Hill Junior High School in the Syracuse suburb of Manlius. The program is designed to give students from two very different environments a chance to interact with each other and thus broaden their world-view.

A group of citizens in the Plattsburgh area, spearheaded by Dr. Charles Mitchell of the Audubon Society, is investigating the possibility of creating an environmental education center at Lake Alice, a nearby Department of Environmental Conservation game management area that is currently being converted to a less highly managed area. A packet of material, complete with aerial photographs, maps and ecological information, has been prepared on the area and will be used in an attempt to persuade the Department of Environmental Conservation to emphasize environmental education rather than wildlife management at the area.

Other proposed projects, which are still in the design phase, include using educational TV to increase environmental awareness and incorporating environmental education into the curriculum of the middle schools in the Tri-Lakes Area of Franklin and Essex Counties. Existing CATV systems, through public access channels, are seen as potentially useful avenues for establishing dialogue and exchanging views among subscribers. The

potential of Cable TV in the large resort areas for influencing the transient population of recreationists is also of high priority among many residents.

NEEDS

All conference activities pointed to a definite need for local and/or regional coordination of programs and resources. The contacts initiated through the workshop and the materials contained in the inventory were first steps in this process, but to be effective coordination must be continued through a central facility. Whether called a referral service, a clearing house or a regional environmental education center, the facility's primary function would be referral and coordination. It would refer inquiries to appropriate environmental specialists and provide information on successful programs, teaching aids and materials and facilities suitable for environmental education experiences.

The schools throughout the region are exploring ways of increasing student awareness of the environment through integrated educational programs. Teachers feel strongly, however, that they need additional skills, facilities and materials to deal adequately with their new teaching responsibilities. Pre- and in-service training courses are seen as particularly important.

The region seeks a comprehensive approach to environmental education through programs which involve the entire community. However, many of the projects they see as worthwhile and important require outside funding for program development and implementation. Because of the unusual characteristics of the Adirondack region, participants feel that any new funding for environmental education in New York State should be awarded on a regional basis. In this way they hope to avoid all money going to sections of the state most skilled at grant proposal writing.

A fourth need, less often expressed and perhaps only partially recognized, concerns the shifting of emphasis from conservation education to the more

inclusive education in environmental conservation. This is a difficult task in an area where conservation of natural resources is such an obvious need and other environmental problems are relatively inconspicuous. In order to avoid the degree of environmental deterioration now being felt in other parts of the state and nation and to heighten awareness, interest, and appreciation of the Adirondack environment such a shift of emphasis is extremely important.

ABSTRACTS FROM THE ADIRONDACK

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ENVIRONMENTAL EDUCATION

RESOURCE INVENTORY

## CLINTON COUNTY
## PROGRAMS

Clinton County 4-H - Marion Perky, Jim Lockley
561-7450

County Pollution Study (done by teens, directed by Stan Kourofsky) - slides available

"Reuse Rags and Rubbish" - project related to recycling of plastics, synthetics, etc. by finding new uses - 15 minute presentation for schools and groups - materials available

Wood Walks - specified areas such as Peasleeville, Miner property in Chazy, etc. to study seasonal changes, identify plants, wildlife, etc.

Overnight environmental study program - Miner Institute

Survival training - major program with preparatory lessons and training in survival techniques, homemade survival kits, finding food and shelter, compass and map reading, etc.; field training.

Camp Echo - Miner Institute - 2 week program in living with environment, primitive camping and survival experience.

Conservation Club (Keeseville) boys 9-16 study ecology and conservation while hunting, fishing, etc.

"Ecology of Pond" - program in planning stage using Cornell resource materials - how ponds form, develop, become inhabited, age, etc.

Developing program in community understanding for second graders in conjunction with area teachers.

Cooperate in International Conference(s) on Youth - with Vermont and Quebec - on mutual environmental concerns.

Participate in 4-H program at Lake Colby Camp; Clinton County conservation field days; hunting, boating and snowmobile safety.

General projects: conservation, wildlife, woodlot/forest, etc.

Would like to: develop tour of county with station stops at locations illustrating dos and don'ts of environment and pollution control; problems and resources.

Major concern: land use, what's happened other places could happen here.

Cooperative Extension - Carolyn Russell - 561-7450
Elaine White et al

Home economics - studying human resources and family housing; mobile home zoning and park improvement
- phosphates - material available
- population problems - material available
- household refuse

Agriculture - dairy, crop, fruit divisions, forestry
Frank McNicholas, Floyd Alcott et al.

League of Women Voters, Plattsburgh Area unit

Environmental Quality - national study topic

Local topics: Land use and zoning - Sally Carey, chairman
Solid waste - Maggie Kennedy, chairman
Recreation - Jeannette Momono

Publications available from Margaret Hunkins, Plattsburgh

## ESSEX COUNTY
## PROGRAMS

Cooperative Extension - Carl Ingelstrom 962-8291

Working with schools in specific environmental and conservation programs; publish monthly newsletter on related projects and items from other areas;

prepared, distribute preliminary report on environmental studies and potential demonstration projects - a summary of facilities and programs in environmental education. Many other educational programs and materials available

Twin Valleys Camp - Ernie Coons, PSUC 564-3142
700 acres, diversified ecology, trails, camp buildings. Used for BOCES Title I summer project - 150 problem children from Clinton and Essex Counties - Also used for teacher training programs in outdoor education.
More information available from Mr. Coons.

Boy Scouts of America
Northern half of county - Adirondack Council, Plattsburgh - Foster Chase, executive 561-0360
See Clinton listing for detail on programs, facilities.
Southern half of county - Mohican Council, Glens Falls - Richard Bielefield, executive 792-5433
See Warren listing for detail on programs, facilities.

Girl Scouts of the U.S.A. - North Country Council
Plattsburgh, Carole Guyon, executive 563-1560
See Clinton listing for details of programs, facilities.

Lake Champlain Committee - Roderic Giltz, N.Y. co-chairman - main office, Shelburne, Vt. 1-802-985-3932
Adopt-a-Stream - Stream improvement, maintenance, monitoring, for tributaries of Lake Champlain; materials available.
Educational and study activities on such subjects as oil barges and oil spills, lake shore preservation, power plant siting and controls, land use management, water quality, etc.

Adirondack Foundation - Courtney Jones, Westport, President 962-8608
Assists communities with planning; developing environmental education curricula and programs:

research work in conservation and environmental problems and environmental law.

E.C.H.O. - Essex - William Farrell
Preservation and restoration of natural and architectural assets of buildings and community, lakefront, environment, etc.

Elizabethtown Garden Club
Planting trees and gardens, community improvement.

## FRANKLIN COUNTY
## PROGRAMS

Conservation Department - Headquarters, Raybrook 891-1370
Lake Colby Conservation Camp - conservation education for young people; teacher training for adults; seminars and conferences.
Tupper Lake biology tour - 7 mile hike to study forestry, fish, wildlife, ponds, bogs, etc. - all biology students from T.L.C.S.
Campsite program - conservation education programs in state campsites at Meacham Lake and Fish Creek; weekly programs conducted by graduate or undergraduate environmental education students, nature walks and evening programs.
Franklin County Conservation Education Center, St. Regis Falls - conservation education field days for 6th grade students from county - in cooperation with schools and 4-H

Paul Smith's College - Paul Smiths Wm. Rutherford Jr., Academic Dean
Two-year associate degree program in forestry; new two-year program in ecology and environmental technology starting 9/73; catalog available
Offer field trips for interested groups - nature trails, etc. averaging more than 300 people per year.
Speakers available on forestry and environmental topics, conservation, etc.

Lean-tos for student and visitor group-camping
Campuses at Paul Smiths and Gabriels - forest land, sugarbush, experimental programs.

4-H - Franklin County - Marvin Olinsky, agent 483-4940
Newsletter - environmental notes for teachers and student supplement entitled "BONG" nearing completion, first issue by September.
Outdoor education program - three weeks each summer, Camp Overlook, Mountain View (camp available for rent)
Participate in conservation education field days-St. Regis Falls center
Planning environmental awareness project using "talking petunia"
Would like to do outdoor education program for retarded, emotionally and physically handicapped at Overlook if funds available; cost, $24 per child; need $500 - $1000 to support program; would like suggestions from others who have tried regular camp program with handicapped.

Boy Scouts of America - Adirondack Council, Plattsburgh - Foster Chase, Executive 561-0360
See Clinton listing for general programs.
Camp Bedford - used for year round camping; available for rent
Troop projects include St. Regis Falls (cemeteries, church yards) Moira (pond improvement), Hogansburg (shrubs, hedgerows, gardens, streams, clean-up)

## HAMILTON COUNTY
## PROGRAMS

Conservation Department
Campsite environmental education programs - Limekiln and Eighth Lake - nature walks and evening programs led by graduate and undergraduate environmental education students weekly during summer.

Boy Scouts
North - Adirondack Council (see Clinton for programs)
South -

Girl Scouts
North - North Country Council (see Clinton for programs)
South - Mohawk Pathways Council, Schenectady.

Limekiln Lake Association, Inlet
Community improvement, septic system tests and enforcement, lake level controls, prevent litter, general conservation and wilderness preservation.

Inlet (Town)
Establishing new set back regulations to reduce water pollution from lake-front cottages.

Hope (Town)
Filed protests against pollution of Sacandaga River.

Adirondack Mountain Club
Cold River Chapter, Indian Lake

Industries (see regional listing of industries for details)
Adirondack Lumber Company, Wells

## WARREN COUNTY
## PROGRAMS

Warren County 4-H - Tim Murphy, agent 623-3291
Club projects in science, outdoor education, conservation, tree identification, etc.
Sponsor 4-H members for state Conservation Education Leadership Program at Camp Arnot.
Conduct Adirondack Ecology Tour - educational program
Conduct canoe trips (4-5 days) in Long Lake and Tupper Lake areas, with conservation education and ecology experience and seminars.
Conservation Education field days.
Sponsor Sacandaga 4-H camp (with three other counties)--summer program (Speculator)

Plan to develop a conservation education center (location not yet determined) with water, forest and soil resources close to travel routes.

Cooperative Extension - Tim Murphy, agent 623-3291
Assist with Interagency Directory (community, cultural, educational, service agencies, etc.)
General Cooperative Extension services
Assist with land use planning seminar

Girl Scouts of the U.S.A.-Adirondack Council, Glens Falls, Mrs. Ruth Gustafson 792-2651
New emphasis on ecology -"Eco-Action" - materials available from council office.
Camping - joining with other councils for specialized camping programs; bike trips, horseback riding for girls from other councils.

Boy Scouts of America - Mohican Council, Glens Falls
Richard Bielefield, executive 792-5433
Camp Wakpominee, West Fort Ann -- on-going projects in forestry, wildlife, tree cutting and camping. Plan to set up tree farm, with help from SCS, DEC, etc., start in early spring.
Troop projects include helping towns with campgrounds and parks; working with PTA in ecology programs, about 500 boys in about 50 separate projects in conservation-ecology.

Conservation Department - Raybrook, Warrensburg
Campsite program in environmental education, led by graduate and undergraduate environmental education students at Warrensburg, Stony Point and Lake Luzerne; nature walks, evening programs.

Adirondack Mountain Club - Grant Cole, executive secretary 793-2673
Conservation, Forest Preserve, outdoor wilderness recreation, etc. -- publications available
Glens Falls Chapter ---

CLINTON COUNTY
RESOURCES

State Parks:
Macomb Reservation - conservation education center construction; partially completed by spring.
Lake Alice - wildlife management area
Miner Lake - undeveloped lake and marsh areas
Cumberland Bay State Park - bogs, forest land
Valcour Island - nature preserve proposed
AuSable Point State Park - marsh, bogs, forest land
Point au Roche - park and nature education center proposed

Camp Jericho - owned by Plattsburgh YMCA Contact Bob Anthony
300 acres, partially developed for recreation and camping; man-made lake designed by Soil Conservation Service; may be available at times for use by other organizations.

Camp Tapawingo - owned by North Country Girl Scout Council lake shore, Point au Roche, available for rental, base rate of 25 cents per person per night; leantos, waterfront, lodge, recreation areas.
Contact: Scout office

Apple orchards - Peru and Chazy

Quarries - Plattsburgh (Bouyea and Dooley property) - geology, biology, ecology studies

AuSable Chasm - Keeseville - geology

Rugar Woods - Plattsburgh State University College

Republic Steel Mines - Lyon Mountain - slag piles

Miner Institute - sugar bush, buffalo herd, conservation education, etc; staff trained in varied fields of conservation, agriculture, environment.

Plattsburgh State University College - planetarium. Personnel in varied fields

Cooperative Extension - 4-H materials -- include:
Slides on local pollution prepared by teen group
"America in Trouble" - National Wildlife Federation - booklets, films and scripts.
"Population Affairs in New York State" - package of printed materials, tapes, etc.
"Phosphates" - package of materials, tapes, slides, script.
--and many on individual projects; listings available.

Soil Conservation Service
Recreational Potential Inventory - copies available from SCS
Erosion and sediment control; Soil and Conservation Needs survey
--and many booklets on specific types of projects applicable in all counties.

Girl Scout, Boy Scout and 4-H materials available from respective offices; some samples available

## ESSEX COUNTY RESOURCES

Burnham Reservation - Boy Scouts
Route 22, Willsboro, 80 acres undeveloped, available for primitive camping; contact Adirondack Council office Plattsburgh for information

Adirondack Loj and Johns Brook Loj - Keene
Adirondack Mountain Club - main buildings, lean-tos, cabins; outdoor facilities; hiking and cross country ski-trails from both locations; lodging and meals available, set fee schedule; some nature education programs, cross-country ski lessons, etc.

Twin Valleys Camp, Lewis - PSUC
700 acre tract, wilderness areas, diverse ecology, trails, lean-tos, cabins, labs; used for outdoor education programs by Plattsburgh State

University College and school districts; other uses possible; contact Ernest Coons, Coordinator of Outdoor Education, PSUC, 564-3142.

Ticonderoga School Forest Area
50 acres of woodland and marsh; trails and shelter; leased to school by International Paper Company.

Huntington Nature Trail and Adirondack Ecological Center, Newcomb
contact Dr. Donald Behrend for information on facilities and programs; complete ecological and nature study center.

Whiteface Mountain, Wilmington
Study of Adirondack geology, flora and fauna, effects of altitude and weather.

Atmospheric Sciences Research Center, Wilmington
Weather and atmospheric studies; summer lecture series.

Cornell University experimental sugarbush - Bearcub Rd., Lake Placid 523-9137

Mining Museum, old Mineville hospital building, now being organized; artifacts of mining industry; Republic Steel mines closed, but slag piles remain west of Port Henry.

Penfield Foundation - Homestead - Ironville
Exhibits include replica of original electromagnet used by inventor Allen Penfield in separating iron ore, key invention in development of electric motor.

Adirondack Center Museum, Elizabethtown
Agricultural, forestry, mining exhibits.

FRANKLIN COUNTY
RESOURCES

Franklin County Conservation Education Demonstration Center, St. Regis Falls Ira Trotter, manager
Cooperative project of several agencies including St. Regis Falls Central School, Franklin County Fish and Game Federation, DEC, 4-H, etc. Man-made pond, nature trails, etc.

Overlook 4-H Camp, Mountain View
Owned by Franklin and St. Lawrence county 4-H Large acreage, winterized buildings, borders on Indian and Mountain View lakes; accommodate about 50 people at a time; encourage use by other groups; brochure and rental schedule available. Contact Marvin Olinsky, Franklin County 4-H agent 483-4940

Camp Bedford, Boy Scouts of Adirondack Council
1600 acres, winterized, caretaker year-round; available for use by other groups; contact Foster Chase, council executive, 561-0360. Description in council's green camping guide.

Lake Clear Girl Scout Camp - North Country Council
Used spring and summer by Girl Scouts; information available from council office, Carole Guyon, 563-1560

Lake Colby Conservation Education Camp - DEC
Camping program for young people during summer; also used for 4-H tour of Adirondacks and for seminars of DEC personnel and other groups; information available from DEC-Raybrook.

Paul Smith's College
Field trips in forestry, forest recreation, nature, conservation, maple sugaring, etc.; occasional use of lean-tos for camping.

Six Nations Indian Museum, Onchiota Ray Fadden, director. Mohawk Indian views on nature, plants, animals, conservation, etc.; exhibits of Indians'

ways of adapting to environment; opportunity to feed small wild animals; materials and publications; Indian artifacts.

St. Regis Lacrosse Company, Hogansburg
Indian demonstrations of hand-crafting lacrosse sticks; perhaps only lacrosse stick company in U.S.

## HAMILTON COUNTY
## RESOURCES

Cortland State University, camp, Raquette Lake

Lake Placid Trail

Cedar River Recreation Area southwest of Indian Lake
3000 acres owned by International Paper with access to Moose River Plains; fish and wildlife cooperator management area.

Camp of Woods and Camp Fowler, Lake Pleasant

State parks and campsites

| | |
|---|---|
| Brown Tract Pond | Lewey Lake |
| Buck Pond | Limekiln Lake |
| Eight Lake | Little Sand Point |
| Forked Lake | Moffitt Beach |
| Golden Beach | Point Comfort |
| Indian Lake Islands | Popular Point |
| Lake Durant | Sacandaga |
| Lake Eato n | |

Moose River Plains - primitive camping, etc. -access from Limekiln Lake and from Cedar River gates - restricted access. regulated hunting and fishing, camping; hiking (Cedar River access through private lands of International Paper) 50,000 acres

Speculator filtration and water pollution control plants contact village

Indian Lake water pollution control plant - contact W. J. Kattrein, Jr.

Resource people
D. Vitale, I.P. Co. forest manager, 30,000 acre Speculator tree farm.

Sacandaga 4-H Camp, Speculator
Operated by Warren, Oneida, Fulton, Montgomery counties 4-H organizations; used part of summer by 4-H and part by Junior Grange; available for rental (contact Tim Murphy, Warren County 4-H agent, 623-3291); no geographical restrictions, but in case of reservations conflict, preference given to groups from within four county region.

Cedar Lands Scout Reservation - Long Lake
Operated by Upper Mohawk Council, Utica 315-735-4437 5,000 acres - lake, developed camp area, wilderness area and outpost camping; ranger on site; some hunting allowed by special arrangement; consideration being given to selective logging; available to interested groups for used compatible with Scout uses, contact council office.

Adirondack Museum - Blue Mountain Lake
Adirondack history - emphasis on man's relationship to the Adirondacks; transportation, logging, agriculture, industry, tourism.

Speculator Tree Farm - Speculator - International Paper Company

Chimney Mountain Caves and Rock formations - Indian Lake

Adirondack Lakes Center for Arts - Blue Mountain Lake

WARREN COUNTY
RESOURCES

Camp Wakpominee, Mohican Council, Boy Scouts of America
Richard Bielefield, executive, 792-2673
850 acres, West Fort Ann, winterized; Scouts use weekends year-round; compatible uses by schools and other groups during week possible; contact council office.

Adirondack Nature Conservancy - Tim Barnett

Pack Forest, Warrensburg - Shelly Potter

Barton Mines, North Creek

Lake George Institute of History, Art and Science

Lake George Atmospheric Sciences Research Center

R.P.I. Lake Research program, Lake George

Glens Falls Museum - Bacon/Glen streets, Glens Falls
Historical Association 793-2826-artifacts include logging, river running and canal boat exhibits.

Natural Stone Bridge and Caves - grottoes, caves, waterfalls, potholes, nature trail, trout fishing.
Pottersville 494-2283

Lake George - general ecology, geology, flora and fauna - Kattskill Bay, Indian Kettles...
Environmental approach in cruises?

Lake George-Lake Champlain Regional Planning Board,
Lake George - Please add others

Personnel:
Roger Hague, Finch Pruyn, on pollution problems
John Gobbi, International Paper superintendent, waste treatment
Niagara Mohawk Power Company - atomic energy
Donald Sipps - BOCES - conservation

Field trips:
Lake George Water Pollution Control Plant - contact Harold Gordon, engineer

REGIONAL INDUSTRIES
A-1

Ayerst Laboratories, Inc.
64 Maple Street, Rouses Point 297-2111
Manufacturer of pharmaceuticals.
Staff EPA coordinator keeps director of engineering advised of EPA regulations so that plant is in compliance, planned installations conform and company is on alert for revised regulations which would necessitate modification of existing installations.

Field trip - plant tour Contact C. Cook, Director of Personnel. Tour takes two hours, limited to groups of 10; should be limited to persons having specific interest in the industry or a particular phase; tours for general public discouraged because of technical nature of operations.

Publications and educational materials - none

Speakers, etc.- Highly trained scientific staff; give consideration to inquiries for speaker in specific area if staff has competence.

Coca Cola Bottling Company, Plattsburgh
Route 22 Industrial Park 561-1480
Manufacturer of soft drinks.
Donates plastic pick-up bags to local organizations (CLEAR, Boy Scouts, Girl Scouts, etc.) and provides trucks and men to assist with spring trash pick-up.
Transport wastes daily to Plattsburgh landfill
Affiliation with national organizations which promote environmental concerns, education; pass on information obtained.

Field Trip - plant tour Contact Gary Jock, general manager. Tour takes one hour, production line and plant inspection; general information about industry.

Publications and films - available on specific request from parent company; will order.

Metal Shapes Inc.
Mooers 236-7188
Cold roll formed metal shapes.

Equipment electrical; own well, limited use of water; septic system; use no products which contribute to pollution; only emission is smoke from building heating unit; only by-products are scrap steel sheet, wood cuttings from crate-making and paper from steel wrappings.

Field trip - plant tour Contact D.M. Dunphy, president. Roll forming machines.

While a primary purpose of the Adirondack meeting series was to uncover the needs for environmental education in the region, the Commission was very interested in helping people uncover resources for program implementation which existed within the region. It hoped that through repeated contact with numerous people with like interests and diverse resources, meaningful action projects in environmental education might be developed.

Several groups, brought together through Commission activities, were able to plan and begin implementation of programs. Two projects have become quite advanced since they were first considered by the region. They are described briefly below because the Commission feels that they may serve as models for other communities interested in the environmental education field.

Residents of the Plattsburgh area, spearheaded by the local Audubon Society, are exploring ways of developing Lake Alice, a state game management area, as an environmental education center. The area has been less intensively managed in the past few years, and local residents think that now might be an appropriate time to make a conversion in its primary use. Dr. Charles Mitchell of the Audubon Society organized a citizens group and worked with them to develop a detailed proposal for the area. This proposal, complete with maps and aerial photographs has been sent to various experts in environmental education center planning. Among those experts who agreed to comment on the proposal were John Weeks of the Rogers Environmental Education Center in Sherburne, Michael Storey of Beaver Lake Nature Center in Onondaga County, the Nature Centers Planning Division of the National Audubon Society, and William Colpitts, chief of the refuge division of the U. S. Bureau of Sport Fisheries and Wildlife.

After considering the comments of these experts, the group will revise its proposal and make plans to present it to the Department of Environmental Conservation for their consideration.

A second project, a student exchange program, features cooperation between the Piseco Elementary School in Hamilton County and the Eagle Hill Junior High School in the Syracuse suburb of Manlius.

Ten students in the seventh and eight grades at each school will spend two and a half days at the other school. They will stay with local families during their visit, will attend classes, and participate in a variety of field experiences designed to sample the new environment. Before the exchange itself, students will receive a thorough orientation to the purpose and objectives of the program.

Organizers hope that the exchange program will provide an interesting and enjoyable experience for the students involved and that it will enable them to become

acquainted with an environment very different from their own. They feel that this pilot program has great potential for expansion and that it might eventually be replicated statewide.

Because the meeting series technique may be valuable for generating this kind of activity statewide, the Commission has included in this supplement a copy of the participant resource packet that was used during its all-day meeting on January 25. Participants were given a schedule of events for the day and were asked to respond to specific questions during time periods and were to hand in the forms at the registration desk as they were completed. In this way discussion groups were better able to focus on the issues of concern to the Commission.

Because of the early stage of planning and design found in the Adirondack region, the Commission learned that it had asked for more information than participants could provide in the one-day session. Despite this under-estimation of time involved, much valuable information was gained from the written questionnaires. With a greater time allowance, the meeting format has the promise of yielding even better results.

## ENVIRONMENTAL EDUCATION IN ADIRONDACK SCHOOLS

From a preliminary inventory of programs and resources available in a five-county region - Clinton, Essex, Hamilton, Warren and Franklin counties - there is sufficient evidence to state that environmental conservation is gradually becoming a part of the school curriculum. Although most elementary and secondary schools reported no formal environmental education courses being taught, the descriptions given indicate that the study of environmental education and problems related to the conservation of our natural resources are topics of discussion in science, biology, chemistry, social studies, mathematics, health, English and home economics classes. As one teacher stated in his reply to the questionnaire, "No one teaching in the Adirondacks can overlook the importance of conservation, game laws, fishing limits, and refuges."

Boards of Cooperative Educational Services, which often overlap county boundary lines, appear to be the primary agencies focusing on pure educational programs for environmental conservation. In the Clinton-Essex area the Board offers a two-year occupational training program for 11th and 12th grade students, using the facilities of the school forest land, state parks, and the Georgia-Pacific pulp and paper mill. In the southern area of this particular BOCES operation, students work with the Plattsburgh center and the Yandon-Dillon center at Mineville as well as with facilities in the Hudson Falls area.

This particular program involves study in surveying, recreation, mensuration, logging, pollution, wildlife, nursery practice, silvaculture, forest products and dendrology. Other BOCES operations in this five-county region offer similar occupational training programs using the facilities available and making extensive use of field trips for broadening the educational background and experience of the students enrolled. Program emphasis is dependent upon the nature of the area and facilities.

The inventory revealed few unique approaches to the study of environmental education. It would appear that the elementary school program is more adaptable to this type of education, possibly because of the greater flexibility in the program. More programs were reported for grades 3-6 than any other grade level, and many of these centered around field trips.

In Clinton County, Chazy Central School described its program as a highly unusual one. Some 40 disadvantaged students in grades 3-6 are enrolled in a five-week course where vocabulary and language comprehension are taught through outdoor experiences. The Peru Central School district provides a variety of field trips for approximately 50 grade 6 children who study the principles of ecology, wildlife management, environmental practices, soils and plants, and relate their study of the region to their local community. Available to the Peru Central School is the Peru Park and the Macomb Reservation which is used year-round as an outdoor study area for science and social studies classes for the whole school. The conservation officer and the Peru Lions Club have been of great assistance to the school district in implementing its program.

In Essex County, the Elizabethtown-Lewis Central School, in cooperation with the State University College at Plattsburgh, developed a program for approximately 90 junior high school students. Incorporated in the science, social science, mathematics and home economics classes, are studies relating to environmental problems and conservation of resources. In addition to local field trips, three major field trips were undertaken: a 10 day trip to Cape Cod to study the seashore environment; a trip to the Buffalo area to study pollution and wildlife, and a trip to Cooperstown, New York.

Both Ticonderoga Central School and Schroon Lake Central School reported that special units had been developed for their elementary school classes. Minerva Central School has had an Outdoor Education Program K-12, involving some 300 students, for eight years.

The school employs a supervisor of Outdoor Education and special spring and fall programs are carried on at the school's outdoor laboratory.

Brushton-Moira Central School in Franklin County has initiated two 20-week courses, one in ecology, the other in conservation. The ecology course, available to students in grades 10-12, deals with eco-systems, ecological populations and communities; current issues with special focus on the Adirondack land plan and local issues. The conservation course, open to students in grades 9-12, emphasizes soil, wildlife, water pollution, local pollution problems such as the local swimming area, milk processing plan problems, slaughterhouse blood problems, farm manure, sewage disposal.

Malone Central School, also in Franklin County, responded to the questionnaire indicating it incorporated environmental education in its science and biology courses using a variety of methods. The glacial delta in the area and the Salmon River are fertile fields for exploring forest management, ecology, water pollution, and other phases of conservation.

Indian Lake Central School, Hamilton County, involves some 330 students in grades 4-12 in a conservation and ecology program which is part of the health, geography, science and English curricula. Wells Central School concentrates on an Environmental Science course for 8th graders, emphasizing the effect of chlorides, phosphates, nitrates, and carbon dioxide on water. Lake Algonquin, the Sacandaga River, a private pond and 80 acres of school property are available for an environmental study program.

In Warren County, the Glens Falls City School District offers two one-semester courses, grade 12, on Man and His Environment and Advanced Ecology. The curriculum deals with spaceship earth, air, soil, sewage, problems of the Hudson River, the Adirondacks, forests, fish and game, water, oceans, pesticides, environmental agencies, recycling, personal pollution, land use and local orientation. To implement the program,

speakers, audio-visual aids, field trips and other resources are used including a Hudson River canoe trip from Warrensburg to Gansevoort. This system also has an outdoor education program involving an overnight outdoor camping experience for upper elementary level students.

The Queensbury High School curriculum in social studies and science stresses ecological principles with reference to their application to human environment. Students have been involved in the study of local problems as they relate to the life style of the community. At the Queensbury Middle School, 7th grade students spend three to five weeks in health courses which focus attension on air, land, and water and their relationship to man and the community.

In summarizing the findings of the inventory of school programs, there are many school districts seeking ways of developing among the younger generation a new respect for the world they live in; the need to understand it; to protect it; and to preserve it. However, many of these districts are in need of guidance, resource materials, and a better knowledge and understanding of how to use those facilities and resources available to them. It appears that ecology or environmental clubs spring up before changes in curriculum occur. It would also appear that teachers themselves need far more insight and understanding of the avenues open for resolving the very problems assigned as classroom projects. One might well ask whether a curriculum on a K-12 basis should be developed to prevent elementary and junior high school students from treading the same ground they had covered in their earlier experiences with environmental study.

The schools are to be commended for moving forward toward education for environmental conservation considering the limited experience of instructors and the scattered information which is not always readily available. A central source for pooling information and cataloguing resource materials would serve a real need of teachers.

The North Country Community College at Saranac, the State University College at Plattsburgh, Paul Smith's College, and the Miner Institute at Chazy are also to be commended for their foresight in developing materials and rendering assistance to the public schools. With cooperation from business, industry, conservation groups, and the help of interested private citizen organizations and government agencies, educators can help to make a difference in the living conditions of generations to come.

# MEETING SCHEDULES

# AND

# OPERATIONAL DATA

CONFERENCE ON REGIONAL ENVIRONMENTAL EDUCATION PROGRAM DEVELOPMENT

SCHEDULE

| Location | Date | Time | Topic |
|---|---|---|---|
| Miner Institute<br>Chazy, New York | Monday January 15 | 5:30 p.m.-10:00 p.m. | Workshop Leader's Seminar |
| | Thursday, January 25 | 10:00 a.m.- 5:00 p.m. | Workshop on Assumptions, Goals, and Resources for Regional Environmental Education Program Development |
| | Thursday, February 15 | 1:00 p.m.- 5:00 p.m. | Workshop for Regional Environmental Education Program Planning |
| | Monday, February 26 | 7:30 p.m.-10:00 p.m. | Public Meeting on the Regional Environmental Education Program |
| Warren County Court House<br>Lake George, N. Y. | Tuesday, February 27 | 7:30 p.m.-10:00 p.m. | Public Meeting on the Regional Environmental Education Program |

FOR CONFERENCE PARTICIPANTS

FIVE-COUNTY MEETING
January 25, 1973

WELCOME!! The Temporary State Commission on Environmental Education has been charged by the legislature with studying existing principles for teaching environmental education in New York State and with recommending the extension and development of such programs.

Today's meeting is one of six we are holding throughout New York State to explore the hopes and concerns people have for environmental education at the regional level.

As shown on the schedule, this session will consist of a number of workshops and general meetings. From these we hope will come specific plans for implementing environmental education projects at the county level. In the process, all participants should gain a better understanding of the goals, assumptions, and resources which are important to environmental education in the region.

In each session we are providing a list of questions which we feel will help the group achieve these goals. A recorder has been appointed for each group to insure that ideas are not lost.

A list of questions to be asked in all sessions is attached to this sheet. Reading through all the questions once may help you see the process we will be involved in today and may spark new ideas.

In the final session, we will ask each group to present a summary of the day's activities. We will also be asking for ways in which the Commission might be able to help the county projects succeed.

Some examples of ways the commission could help are:

1. Writing letters of support for a local project to town or school officials.

2. Putting local groups in touch with technical experts in the region and the state.

3. Attending local meetings to help with the organization of the group's project.

4. Our final report to the State Legislature can mention the particular resources, interests, and problems of the five-county area and suggest the things you feel might best help you in developing environmental education projects.

Please try to keep these ideas in mind throughout the day.

FIVE-COUNTY MEETING

January 25

TENTATIVE SCHEDULE

| | |
|---|---|
| 10:00 - 10:30 | Orientation -- Introduction and explanation of schedule |
| 10:30 - 11:30 | Regional Group Meetings<br><br>Each group contains members from throughout the region. Representation will include members of local government, business, conservation groups, educators. The purpose of this session is to get acquainted with the kinds of resource people who are present at the conference; discuss the general goals for environmental education; begin to talk about specific projects. |
| 11:30 - 12:30 | County Group Meetings<br><br>All people from each county meet together. Purpose is to agree on overall county goals; to identify one or more projects worth investigating |
| 12:30 - 12:45 | Contact Time<br><br>A chance to seek out people you met during the regional group meetings and get their ideas and suggestions on your county's projects. |
| 12:45 - 1:30 | Lunch<br><br>Your opportunity to get to know people throughout the region better and share ideas. |
| 1:30 - 2:00 | Film "Of Rivers and Men" |
| 2:00 - 2:30 | County Group Meetings<br><br>Review possible projects briefly and decide who will give a brief description of the possible projects to the entire group. |
| 2:30 - 3:30 | Entire group meeting<br><br>Representative of each county group presents the projects his group has discussed. Helpful hints and constructive suggestions for implementing the projects are sought from the audience. |
| 3:30 - 4:00 | County Group Meetings<br><br>Decide which projects you'd most like to do and who will work on each. Outline steps to achieve action. Appoint a chairman, a secretary, and set time and place for next meeting. |

FIVE-COUNTY MEETING

TENTATIVE SCHEDULE
Continued

| | |
|---|---|
| 4:00 - 5:00 | Entire Group Meeting<br><br>Summary of projects that each county group will attempt and recommendations of ways the Commission might be of assistance. |
| 5:00 | Adjournment. The next meeting at Miner will be a half-day session on February 15. |

## HELPFUL HINTS

## FOR SUCCESSFUL PROJECTS

Some of the most successful projects in Environmental Education depend heavily on volunteer help. How do you find people who will devote their time and energy to a project without being paid?

The secret is to make them feel that they can make a specific and substantial contribution to the project. And one of the best ways to convince them is to pick a good project to start with.

Here are some of the characceristics which the ideal project has:

1. The goal must be clearly worthwhile -- it must do some good.
2. The tasks should be diverse and relatively enjoyable to perform.
3. Volunteers should be given satisfying jobs, even if they can work for a short time at irregular intervals.
4. There should be few jobs which require highly specialized skills.
5. There should be few jobs that have to be done at specific times.
6. Projects should be able to operate without a great deal of outside money.
7. The project should have a definite goal which can be attained in the foreseeable future.

FEW PROJECTS HAVE ALL THESE CHARACTERISTICS. IT IS NOT NECESSARY THAT THEY DO. BUT IT HELPS TO KEEP THEM IN MIND IN CHOOSING WHICH PROJECTS TO UNDERTAKE.

FOR THE DISCUSSION LEADERS

Our meeting today is something of an experiment. We know there is a lot of interest in environmental education in the 5-county area and that the resources are available here to sustain many interesting projects. Often however, people are uncertain how to begin. They need encouragement and the advice of others familiar with the area.

We've selected you as a discussion leader because we think you can help uncover the resources which now exist in the region and start good environmental education projects which will meet the needs of your area. You can help us by maintaining a friendly atmosphere of exploration within your group, serving as a moderator in discussions, and keeping track of the ideas generated in each meeting. Most groups will have two or three discussion leaders. Try to work together to draw out the other participants.

Here are some suggestions;

1. Set the stage for discussion by having each person introduce himself and tell the group a bit about his background, interests, and needs.
2. Try to draw all group members into the discussion. Ask silent members for their comments, etc.
3. Keep track of time and progress -- there are specific goals for each session. Try to see that the group reaches them in the alloted time and that the recorder makes accurate notes.
4. If more than one project gets a lot of interest and support, see if there are enough people present or known in the county to make it successful. If starting two projects seems feasible, try to get both committees to meet in the future to discuss their successes and failures.
5. Good luck!

NOTES FOR CONFERENCE LEADER

ORIENTATION AND OVERVIEW

What is the Commission?
Why the series of meetings in the 5-County area?
Why the meeting today?

Explain that "youth" includes anybody who has something to learn and that environmental education is not just outdoor education. Emphasis on projects and processesses which are right for this region.

Stress that the success of this experiment depends on the people here. Resource people will be available, but it is up to the participants to seek them out.

For those of you who have had projects in the back of your mind, this is your chance to get them started. Make the most of the opportunity.

REGIONAL GROUP MEETING

Suggest that a way to get started might be to go around the table with introductions. Each person introduces himself and tells briefly about his affiliations, experiences, desire to help in any specific way. We're trying to identify the resources that each person has to offer. Resources can be people who lived in the area for a long time, technical expertise, ability to contribute time and energy, desire to help, etc. You don't have to be rich or have a Harvard education to be a resource.

Then look at the goal we suggested last week for environmental education. Is it broad enough to cover the whole region? Can it be any narrower, but still applicable to the entire region?

How to think up projects -- lots of ways. Each person could write down a project on a piece of paper; the discussion leader would then read them and all members of the group could talk about them. Or you could all think about one group of people at a time who need environmental education and then consider the ways to reach them. For example, you might think that students, 4-H, or scouts needed environmental education. The next step might be to discuss what would appeal to them most -- nature centers, educational television, etc. Parks, dumps, roadsides, and other areas have all been used for environmental education projects.

Remember that in this period we're not trying to settle on a specific project, only to get everyone thinking in terms of what can be done.

COUNTY GROUP MEETINGS

Take stock of your county. What's being done in the schools, in clubs, in the media for environmental education. Should the adults be more aware

SESSION REPORT FORM #1

10:30 - 11:30

The main purpose of the first hour session is to get to know each other better and to determine whether the assumptions for environmental education outlined below are appropriate to this region

ASSUMPTIONS:

1. Increasing demands upon the environment present problems which require resolution.

2. Regional environmental education is an essential component of solving environmental problems.

PLEASE DISCUSS THE FOLLOWING QUESTIONS DURING THIS HOUR AND FILL OUT THIS FORM BEFORE YOU REGROUP.

NAME: _____ COUNTY: _____

1. Do the assumptions for environmental education seem appropriate for the 5-County region?

2. Are there more specific assumptions which can be made for the 5-County region? What are they?

3. What goals for environmental education do you see as particularly important for this region?

4. What projects have you been involved with in the past few years which respond to these goals?

5. Are you currently involved with environmental education in any way? (in schools, scouts, cooperative extension, etc.) Describe briefly your activities in this area.

SESSION REPORT FORM #1
Continued

6. Do you expect problems in keeping the project(s) operating or in expanding your activities? If so, what resources do you need most (people, money, materials, better planning, etc.)

7. How can you obtain these resources?

8. What other projects would you like to see started.

SESSION #2

COUNTY GROUPS
11:30 - 12:30

RECORDER'S NAME: _____ COUNTY: _____

TO THE RECORDER: Please collect the forms filled out by your group at the regional meeting. These may be helpful to you in discussing specific projects. Turn them in at the registration desk after this session.

The purpose of this meeting is to begin discussing specific goals and assumptions for environmental education in your county and identifying the kinds of projects which will be of benefit.

PLEASE ANSWER THESE QUESTIONS WITH YOUR GROUP. THE RECORDER SHOULD READ BACK HIS NOTES TO THE GROUP TO CHECK FOR COMPLETENESS.

1. Are the assumptions and goals of environmental education discussed for the region appropriate to your county?

2. Can these goals and assumptions be made more specific to your county?

3. What are the environmental projects identified by your team?

4. What information do you need to decide how worthwhile each project would be?

5. Is there anyone at this meeting (perhaps from another county) who might be able to offer assistance or suggestions?

6. Who will contact these people during the coming break?

SESSION #3

COUNTY GROUPS
2:00 - 2:30

RECORDER"S NAME: _____ COUNTY: _____

TO THE RECORDER: The purpose of this session is to discuss the information team members gathered during the "Contact Period" and during lunch. The new information should help flesh out the skeletons of some of the projects and give the team a clearer idea of what will work and what won't.

PLEASE GO OVER THE FOLLOWING QUESTIONS WITH YOUR TEAM AND RECORD THEIR ANSWERS BELOW. BE SURE TO READ BACK YOUR NOTES AT THE END OF THE SESSION TO CHECK FOR COMPLETENESS.

1. What new information about your projects have you gathered since we last met?

2. With this additional information and time for reconsideration, which projects now seem most feasible?

3. Describe in as much detail as you can what will be required to undertake these projects.

4. Who from the team will tell the general session about each of these projects?

EDUCATION FOR ENVIRONMENTAL ACTION

CONFERENCE

SUNY ALBANY CAMPUS CENTER

Feb. 15-16, 1973

With the cooperation of the New York State United Teachers, the Temporary State Commission on Youth Education in Environmental Conservation sponsored a conference, "Education for Environmental Action", designed to provoke a greater awareness of the need for environmental action; to provide information on resources and ways of using these resources more productively; to focus attention on the role of the schools in the implementation of not only school-oriented programs but also joint school-community action activities.

The Commission sought input from students, teachers, school administrators, schoolboard members, business, industry, local conservation commissions, citizen groups and the State Department of Education and Environmental Conservation. In seeking information via this conference, the Commission hoped that through the interchange of ideas, it would stimulate a greater awareness of the need for schools to embark upon programs in this area; would enlighten the Commission on what is being done, what needs to be done, and would give some possible direction as to the future role of agencies involved in the promotion of environmental education.

PARTICIPATION EXCELLENT

From the start it was agreed that the conference would be limited to 100 participants, representing the above mentioned groups. Following a survey of schools in a four-county area, six school districts that had had some experience with environmental education, were invited to send a team of eight persons - three junior or senior high school students, three teachers, one school administrator, one schoolboard member. To assist these teams, specialists in the field of environmental education were invited to attend. Letters of invitation were also sent to selected individuals, major business and industrial establishments in the vicinity of Albany, local conservation groups and governmental agencies.

Response from the schools was gratifying. School districts represented included: Bethlehem Central School District (Delmar), the East Greenbush Central School District, Saratoga Springs Public Schools, the

Schenectady Public Schools, Scotia-Glenville Central School District, and the Schodack Central School District. Response from business and industry was limited, undoubtedly due to the two-day commitment necessary to participate. However, representatives from Niagara Mohawk Power Corporation, Atlantic Cement, and General Electric Corporation took part in the conference. In addition to personnel from local conservation commissions and other groups, there were representatives from the State Department of Environmental Conservation, the State Public Service Commission and the State Education Department. The college personnel attending came from: the State University of New York at Albany, the State University College at Cortland, St. Lawrence University, Skidmore College and Syracuse University. A total of 76 persons registered for full-time participation. Considering the limited number of invitations extended, response was excellent.

CONFERENCE OVERVIEW

The first day of the conference was devoted to an orientation to the proposed program; a panel presentation by the environmental specialists present, and discussion groups. Each school team became a discussion group with others from the same geographic area assigned where possible. The group reviewed those environmental conservation programs or activities currently on-going in their respective districts; analyzed the role the schools had played in these projects and explored the kinds of projects which needed to be carried on either by the school or the community or by a school/community project. Once identified, the teams were then asked to pick one or more of these projects for in-depth study the next day.

The second day of the conference was given over to a further study of the project, identifying the facilities, materials and other needs; exploring the project in light of the political, economic, social and legal implications involved. Where a team chose to continue work on an existing project, it was asked to evaluate its progress to date and outline the next steps

toward accomplishing its goals. To inject some cross fertilization of ideas into the conference, provision was made for "like interest" groups to meet at which time, students met together, and teachers, administrators and government agencies met in their respective groups. Provision was also made for periodic "feedback" sessions each day so that all groups could share their thinking.

The program was an ambitious attempt to involve school personnel in a process for reaching consensus on a proposed plan; for developing those plans and for identifying and analyzing their needs for making the plan a reality. While going through this process, teams were encouraged to make any recommendations to the Commission which, in their judgment, seemed feasible and desirable for the future of education in environmental conservation in New York State.

ASSESSING THE ROLE OF THE COMMUNITY AND THE SCHOOL

The first step in the process was to identify all the different types of environmental activities which had taken place, were taking place, or were about to take place in a given school district's community. Whereas most teams found this to be a relatively simple procedure; others, according to the reports received, found that there was a definite need to know their community better. Items such as recycling projects, air pollution, noise pollution, land use, the development of environmental education centers, nature trails, etc. seemed to predominate in the reports. However, when it came to analyzing the role the school had played in these projects, the problem became more difficult. In most cases the schools had played either no role or a very small one.

As might be expected, the schools reported helping with recycling projects, the development of nature trails, emphasis on Earth Day programs, a revision of school curricula, field trips, overnite camping trips, Survival and Environmental Clubs and the distribution of information on community projects. It was quite evident that few students and only a few teachers are actually involved in any of the programs which will make a difference in the lives of those in the community.

Only one school district, Schodack Central School, has actively taken steps to develop a totally new approach to environmental education. Sparked by a common concern for their community and the environmental problems it faces, a group of enthusiastic and energetic teachers, worked on their own time and developed an experimental program in environmental education. They achieved the support of the Board of Education and the administration, applied for a federal grant and are now in their first year of teaching the course. Through a rearrangement of classroom schedules, students are able to move out of the classroom setting into the community and work independently on their chosen projects. Local agencies and governmental groups as well as the community in general have given their support. Although the faculty involved are feeling their way in this new team teaching situation, their interim report indicates that those students and faculty members involved have not only a new appreciation for the environment but also a new set of values built upon solid experiences which are real and challenging. They are learning by doing.

This is not to say that other schools are inactive. It does point out that much of what is being done in the schools to involve students is done either through voluntary after-school programs such as the survival and environmental clubs or through courses of study which are fairly well confined to a specific activity such as the 6th grade camping program, a high school physical education elective in camping, an expanded environmental science course, or a course in English and Social Studies with a strong emphasis on environmental education.

The environmental clubs which have sprung up in the schools may be the fore-runners of stronger courses in this field. Presently these clubs rely upon interested faculty members to assist them. The club members in turn relay their knowledge to elementary school pupils, working with teachers to develop lesson plans and teaching the class during their free periods. The young people in Schenectady, engaged in this program, call themselves, "The Ambassadors", and well they may be,

since through their efforts younger students will come to have a greater knowledge and appreciation of the environment. These clubs have sponsored weekend camping trips, helped with the building of nature trails and participated in recycling projects.

The environmental centers, such as the State owned Five Rivers Center in the Town of Bethlehem and the proposed center at Greenfield (a part of the Saratoga Springs Public School system) have great possibilities for educating students; in-service education programs for teachers and for the community as well. The Five Rivers Center has served over 5000 persons from a nine county area during the 1972-73 year. Suburban communities or those in a semi-rural area are in the best position to obtain support for such facilities since land is more readily available. Lacking their own environmental centers, it was pointed out by one group in particular, that city school systems will either have to rely upon rural centers for educating their youth or concentrate their efforts on the problems of the city itself.

The fast-growing community of East Greenbush is presently being used by the school system as their "center" for studying environmental conservation. They are currently interested in the land use by housing developers, zoning codes, the development of an East Greenbush Park and the political, social, economic and legal ramifications of these developments.

The State University of New York at Albany is operating a Student-Faculty Environmental Decisions Commission Forum where those interested in the subjects presented will have an opportunity to air their views. Some students and faculty members from the area school systems attend these forum meetings. Such participation may arouse a more intense desire on the part of some to become more involved in environmental study.

Probably one of the most significant outcomes from this process of assessment was a realization that the schools and the community have yet to find a

means whereby they can and are willing to work together. Much of what is being done in the community itself is being handled by a group of interested citizens who have not realized the potential help the schools could give in analyzing, researching and promoting plans for the improvement of the community. The students present expressed a strong desire to get into the "inside workings" of some of the projects; to serve on local conservation commissions; to play a decision-making role.

## ROADBLOCKS TO IMPLEMENTATION OF ENVIRONMENTAL ACTION PROGRAMS

Although the conference planning committee had hoped each team would develop a rather specific action program and commit itself to it, it became evident after the first day that this could not take place. Teams, for the most part, directed their discussion toward a positive action program but inherent in every discussion group were problems of implementation. While some of these problems may appear insignificant, they constituted real hindrances which must be overcome if action programs are to take place.

Some of these items included: 1) the need for those involved to have a real awareness of the need for the project or activity; 2) the lack of knowledge on the part of many teachers and their need for in-service education in environmental education; 3) the lack of adequate facilities such as nature trails, environmental centers; 4) the lack of financial support for new school programs or involvement in school-community projects; 5) lack of parental and community support; 6) the problem of mass transportation of students, especially for city school districts where there are no school buses; 7) the need for a total reorganization of the school routine to avoid scheduling problems; 8) the pressure of other academic disciplines; 9) liability protection for the school; 10) the pressures of commercial and business enterprises upon the school instructional program; 11) lack of a clearing house for information.

Although those present at the conference held a definite commitment to bring about change, they recognized that without a total faculty commitment to a project which involved all students in the school, the program would stand little chance of success. They felt that this need for awareness extended beyond the school itself. Parents, community groups, service clubs, governmental agencies - the total community must be knowledgeable about what the school is trying to do and understand the need for the changes which may take place.

Traditionally teachers have not been schooled in the techniques of teaching environmental education. Although many young teachers have become enthusiastic outdoor living advocates, their knowledge of how to teach environmental education has not been through a formal course of study. Today many teachers are learning with their students by joining clubs and attending lectures to enhance their ability to deal with the subject. However, if the movement to place environmental education in the curriculum on a Kindergarten through Grade 12 basis should evolve, teachers must be provided with the kinds of experiences which will help them meet their classroom responsibilities. It was suggested that the New York State United Teachers might initiate such programs, either alone, or in cooperation with institutions of higher learning.

Ideally, every school district could profit by having its own environmental center or one close enough by so that students would have an opportunity to be close to nature and observe first-hand the wonders of the environment. But the question was asked, "How can a city, crowded already, provide such facilities?" Even with regional centers, the problem of transportating large groups of students and teachers becomes almost prohibitive. How can the urban child receive an equal education when his suburban counterpart has all the advantages of an educational center? Will the state provide transportation funds to city school districts so that urban students may have an equal opportunity to study nature in its natural setting?

If state and federal agencies can only provide limited resource materials and consultant service, where can a school district look for funds to implement new programs and provide new experiences for its youth? Currently school districts are faced with holding the line on budgets. Staffs are being depleted, not expanded. New programs need new talent, new resources, new materials. Those districts currently enjoying even modest sums for new programs are now faced with phasing them out unless local support from business and industry or private organizations fill the gap. No company represented at the conference indicated that it was interested in providing such support. They did appear willing to provide technical help, resource information, and cooperation where possible in the development of projects. They urged the schools to stress the career opportunities available in the field of environmental conservation, pointing out that business and industry are currently in need of such professional people and probably will be for some time to come.

Although all teams listed a variety of community groups and agencies which might be used by the school to assist with their programs, there appeared to be a lack of real "know how" on how to get such groups involved. For example, local conservation commissions appear to consist of adults who have concerns over the use of our resources. However, these groups have not contacted the schools nor have the schools contacted these groups to any extent. In the Schenectady area, students were involved in the PACE (Protect and Appreciate County Environment) project and a movement is underway to develop an America the Beautiful Fund to purchase land for an environmental center for use by schools, and the community. Should not more of this type of cooperation be forthcoming? Can parents be mobilized to join in effecting change?

Experimentation in elementary schools with the "open classroom" concept which makes it possible for a student to pursue his special interests has met with some degree of success. The lock-step program which has been so characteristic of the schools is beginning to break down with flexible scheduling, modular

scheduling, and other types of school reorganization. The "Free School" appeared on the scene because the learning experience has been confined to the four-wall classroom concept. Desirable as the "open classroom" concept may be, with its possibilities for individualized instruction and pursuit of individual projects, to implement such a program requires creative thinking in school planning. The theory is excellent but the pressures of other academic subjects and the requirements of the State Board of Regents together with the new techniques of teaching needed to implement it, forces a school district to study carefully its organizational and administrative problems. The larger the school, the more difficult the problem.

If students are to break away from the old concept of so many periods of study a day to engage in individual projects, more teachers or teacher aides may be required, and a total revision of the curricula may have to take place so that students may still qualify for their diplomas. The inter-disciplinary approach appears to be one way of bridging the gap but community, especially parental support, will be needed. Therefore the schools are faced with an educational problem right from the start, the problem of educating the public, before they can move into a type of program which will "free" up students to engage in a true environmental education program.

The Schodack Central School team reported they are enthusiastic about their flexible schedule and the individualized instruction they can provide students engaged in independent study projects but they also admitted that the work load has increased and that at times, their frustrations are great. Teachers trained in the traditional approach, especially those who have taught for a number of years, are somewhat fearful of the "open school" concept and yet a true experience in environmental education calls for just this type of teaching technique. Schools, therefore, will have an additional problem of orienting their faculties to this new approach.

Legal problems also cause the schools to be hesitant about engaging in certain types of activities. Although there are steps schools may take to protect themselves against legal suits, those cases which

have been brought against the schools for negligence have cost taxpayers considerable sums of money. Where the student follows an individual project and does not have constant teacher supervision, there is greater possibility for such suits. What action will the state take to clarify and/or change existing legal restrictions to make it possible for schools to move into a new type of school organization without fear of liability suits?

Action programs are real learning situations. But the question was asked, "How far can a school district go in bringing pressure to bear upon the business, industry and other commercial establishments in a community when the school is dependent upon these groups for tax support and the mothers and fathers of the students who may be involved derive their livelihood from these establishments?" Although the question was left unanswered, it was recognized as one of the real stumbling blocks to be faced. Perhaps, as one group indicated, the mobilization of local, county and state support is needed to cope with such a problem.

Every group reported the need for a central clearing house for resource information, consultant help, materials, referral service. Those interested in environmental education now face a long time - consuming search for the materials and information they need. The environmental clubs have helped in the search but the job sometimes seems endless. A central clearing house, either set up on a regional or a county basis, would be invaluable so that one could locate a particular type of information, without the long process of going from one agency to another.

TYPES OF PROJECTS PROPOSED BY THE DISTRICTS

The team identified the following types of projects which might be considered for back-home action; 1) total school involvement in a recycling program, 2) a revision of the curriculum, introducing the environmental education program as early as possible in a student's program, using the inter-disciplinary approach, 3) a school campaign to use reuseable milk bottles rather

than throw-away cartons, 4) an environmental impact study for the school and community, 4) expansion of an outdoor education program, 6) incorporation of more environmental education material in the existing science program, 7) the introduction of 5 week mini-course programs on environmental education, free from academic pressures with much greater flexibility in scheduling to allow for independent study by the student, 8) the development of an educational environmental center for use by the school and community, 9) a program of in-service educational experiences for teachers in the field of environmental education, possibly with the assistance of the New York State United Teachers; 10) involvement with the local conservation commission in planning and implementing projects and activities, 11) the opening up of communication lines with other groups working in the field of conservation, 12) better communication with local business, industry and commercial establishments to learn what they are doing and how the school can share in the program, 13) development of pamphlets, flyers, other materials for distribution to the community showing how the public can improve their community, 14) the development of films, film strips, and other resource materials which may be used by the schools and the community, 15) development of a resource catalogue for the town and the county showing specific sites such as nature trails, etc. in cooperation with the local conservation commission, 16) set up a student involvement "elective" program at the elementary school level dealing with environmental education, 17) use the facilities of the school (printing shop, labratories, etc.) as a community resource center for information and distribution of materials, testing purposes., 18) exploration of local, state, national agencies and private foundations to identify how environmental education programs can survive once they have started.

PROJECTS SELEGTED

In the final stages of the conference, plans began to emerge which school teams thought might be feasible for back-home action. Although each team felt it

could not commit its district to a complete implementation of the proposed project, there seemed to be a consensus that more could be done. As a core of interested individuals, they were willing to try. A brief description follows of the action proposed by the districts.

BETHLEHEM CENTRAL SCHOOL - The team reported that upon their return to their district, they would make known to the Superintendent of Schools their experience of the past two days, present a plan for the development of a Kindergarten through the 12th grade program based upon a recognized environmental problem with no preconceived solutions. The plan calls for using the resources available from the local, county and state governmental agencies, business and commercial interests and other concerned agencies. To initiate the plan and develop an awareness of the need for such a program, the team proposed that a planning committee be brought together consisting of a representative from the Board of Education, the Superintendent of Schools or his designee, a group of teachers representing the K-12 faculty, active and interested students, and selected personnel from business, industry, governmental agencies, and service groups. The course as proposed would undoubtedly have an inter-disciplinary approach and require some type of classroom schedule change to be implemented properly. A project director, sincerely interested in the proposed program, would be selected by the planning committee.

SARATOGA SPRINGS PUBLIC SCHOOLS - Since this team had already initiated a project to develop the Greenfield Environmental Education Center, the members elected to continue work on the project. This project also involves Skidmore College which has looked upon this proposed center as a possible pre-service and in-service training facility for teachers. The team proposed that their program for the next few months would be to; 1) purchase additional land, 2) employ a project director, 3) begin use of the area as a pre-service and in-service training ground for teachers, 4) develop a curriculum program, 5) develop community interest, 6) improve the physical plant. The group also proposed that they try to have

a natural area survey and an environmental impact study performed. Their key objective is to obtain a qualified project director committed to the program.

SCOTIA-GLENVILLE CENTRAL SCHOOL - Rather than tackle one project, this team decided (1) that high school students should be encouraged to conduct a teaching program on environmental education, working with teachers, in one of the adjacent elementary schools. This would be a program organized through the existing environmental science program in the high school. They also proposed that they should work for an environmental educational council which would represent the concerns of industry, teachers, students, and the general community. The Council would be charged with the responsibility for developing a local clearing house which would provide resource material for student projects and other types of information. Students would be encouraged to embark upon environmental projects on either an individual or group basis and such projects would be "student-run."

SCHODACK CENTRAL SCHOOL - According to the objectives of this school district's program, the "ultimate goal of the project is to change ecological values and practices of students and the community and to bring the students to an appreciation of their surroundings through direct experience in sound ecological experimentation, practice and politics." This district has already initiated a curriculum change and is now concerned about its continuance in the absence of federal funding. The team devoted its time to the question, "How can the future of an environmental program be insured once the program is in action?" Some suggestions which came from this group included: 1) involve local and state legislators in actual course activities, 2) visit the State Legislature, talk with legislators about the problems of finance and seek to get a liberalization of the state-aid ratio for schools involved in experimental programs, 3) accept every opportunity to testify before Commission hearings and other groups to explain their program, 4) seek assistance from the State University of New York at Albany and other governmental agencies; 5) urge that fellowships be instituted for

those who wish to pursue their interest in environmental study, 6) request the State to make available mini-grants, 7) work more closely with all community groups, including business and industry, to develop a better rapport, 8) bring pressure to bear upon the State Education Department to show greater support for environmental education and provide materials and assistance to develop and carry out such programs, 9) develop a stronger awareness in the community for the need for the program by using all types of media and using students to carry the message to the adult community, 10) develop an interest at the elementary level by using high school students as aides to teachers and helpers in the teaching act.

SCHENECTADY PUBLIC SCHOOLS - Although the Schenectady team had made some inroads through its Ambassador program, this team felt that to be effective, it needed to meet with other school groups in the school system and other county schools, the Schenectady County Environmental Council, business firms, industry and other interested groups to consider how environmental education may be furthered. The group was concerned about the use of land areas for outdoor teaching, in-service education for teachers. The goals, as stated, included the gathering of ideas for the development of a county-wide program and the establishment of a clearing house where lists of resources and copies of materials could be obtained for use by environmental clubs and the community. The team felt that it was imperative that city officials be included in any discussion of environmental education planning.

EAST GREENBUSH CENTRAL SCHOOL - This team could not decide upon any one project but discussed the possibility of creating a mini-course, taught at the high school level on ecology and the environment which would be more than a classroom course. They recognized that to do this would require a new type of scheduling to make it possible for students to have a real experience in environmental conservation. They also considered setting up an adult education course in ecology. A third proposal dealt with a combined student-adult program on natural resources and their use. Such a

program would tie in with the problems the community is presently facing due to its expansion. A recycling program for paper and glass was considered which would involve both the school and the community.

RECOMMENDATIONS TO THE COMMISSION

In reviewing the recommendations presented to the Commission, it should be recognized again that this conference emphasized the role of the schools in the promotion and implementation of environmental conservation activities. The following recommendations reflect the concern of the schools.

1. A liberalization of the state-aid ratio for schools - Under the existing state-aid formula for financing public education, the State of New York, as defined in the law, currently agrees to pay to the average local school district 49% of its operating expenses, based upon the expenses of the previous year and subject to the per pupil level of expenditure as determined by law. School districts obtain their additional school support primarily from local real estate taxes. The school districts argue that many expenditures are exempt from the formula and that in reality, schools do not receive the above amount. Were the formula applied to current expenses, they would be in a somewhat better position.

2. Transportation Funds - City school districts in particular, as well as other school districts, wish a revision in the State's present formula for transportation aid. To transport masses of students throughout the year to environmental education centers and on other types of field trips, whether on a local or regional basis, will add a considerable item to the school's budget. City school districts, where public transportation is the only means of transporting students, would be heavily penalized if financial aid is not available. These are also the districts having tax limitations.

3. Mini-grant Funding - Local school districts request that sufficient mini-grants be available to provide the necessary materials, facilities, and equipment for carrying on a significant program.

4. New Taxes - Although not totally acceptable to the whole group, a proposal was made to the Commission to consider a special tax levy on sporting goods and related items, on the basis of those using the equipment and facilities have the ability to pay. Those not agreeable to this proposal noted the voluntary contributions made to environmental conservation by Sportsmen Clubs and other groups and cautioned that such a tax is not only difficult to levy but might have a reverse effect.

5. Clearing House - Every group recognized the need for a central clearing house. They requested the Commission to establish some type of referral system whereby those interested could obtain information on resource materials, speakers, pamphlets, films, film strips and other such items. This clearing house could provide a listing by counties of resources available to the public, including camping sites, environmental centers, etc.

6. Fellowships - The participants requested the Commission to seek legislation to establish fellowships in environmental education for environmental science teachers. They also suggested that the State University of New York and other higher education institutions in the state be encouraged to develop sound programs in the field of environmental studies.

7. In-Service Education for Teachers - The participants urged the Commission to encourage the colleges in the State and the State Education Department to make available in-service training centers where teachers may take basic, refresher, or advanced courses in environmental science.

8. State Education Department Promotion of Environmental Studies - Conferees demanded that the Commission request the State Education Department to exert more concern and effort to stimulate

environmental studies at the public school level and provide guidelines, consultants and other types of assistance needed by a school district in setting up and implementing such a program.

9. More use of all types of communication media - The Commission was requested to make a broader, more comprehensive use of every type of media, particularly cable TV where available, to create a greater awareness of the need for environmental conservation and what the public in general can do about it.

10. Reorganization of Local Conservation Commissions The Commission was requested to take those steps necessary to make local conservation commissions more effective such as broadening representation on such commissions to include school district personnel, teachers, and interested students, as well as business and industry.

EVALUATION OF CONFERENCE

For the most part, participants in this conference felt the two-day program had given them a new insight into the problems of environmental education, the need to develop a greater awareness of the changes taking place and find solutions for protecting our natural resources. They also experienced frustration when they could not find clean-cut answers to their problems of implementing change in the school program. There was a new recognition of the need for the schools to cultivate the community for its support, both morally and financially.

The students present found that in their "like interest" group, all schools had similar hurdles to overcome. The students spoke out freely against the adult management of most programs. They want to be a "part of the action". They urged that local conservation Commissions include student representation; that they be allowed to play an active role as a commission member and have a part in the decision-making process. To show their enthusiasm, they immediately set up a plan for a county or regional environmental youth club; outlined some of the

programs they might have such as exchange visits, and proceeded to set up communication lines for a future meeting.

In assessing the conference from the planning committee's point of view, it could be called a success - more successful for some schools than for others. Except for one school system, all attempted to follow the process for initiating and implementing a project, some more successfully than others. For the most part, the environmental specialists were helpful to the groups, particularly to those groups which could see the possibility of a specific future program back home.

It was unfortunate that the conference was held just before a school vacation period. This cut down attendance in the last afternoon. It is likewise unfortunate that more time could not have been provided for "like-interest" groups. Even though the schedule was changed to make this possible, more meetings of this kind would have been desirable. Greater participation from business, industry, local conservation commissions and town and/or county planning boards would have been provided a broader base for obtaining local information for the schools.

In terms of desired outcomes, the Conference participants did pinpoint some of the real issues facing schools and communities. The recommendations, from a school standpoint, appear to have a sound basis. The real worth of the conference, however, will not be known for some time to come in terms of back-home action programs. At this writing, there have been telephone calls already asking for assistance which is indicative of at least some positive action.

# A REPORT ON REGIONAL ENVIRONMENTAL EDUCATION

# AND A PLAN FOR

# ITS FUTURE IN CENTRAL NEW YORK

MARCH 1973

ACKNOWLEDGMENTS

In December, 1972, the Temporary State Commission on Youth Education in Environmental Conservation asked the Environmental Management Technical Advisory Committee of the Central New York Regional Planning Board to help plan a regional seminar on environmental education. The seminar was one of a series the Commission was holding throughout the state. The results of that 19 January, 1973, seminar in Syracuse are summarized in the first part of this report.

By the time this report is printed, the Commission will have completed the majority of its work on a statewide plan for environmental education. This report has been written as a contribution to the Commission's thinking and is an expression of the needs and wants of the citizens of Central New York.

A series of meetings and discussion resulted in agreement on the overall concept of the plan and identified key people who were able to summarize the important issues. These written reports were reviewed by a group of regional representatives from a wide range of interest groups. The results of their review have been incorporated into this report.

Special acknowledgment is thus given to:

| | |
|---|---|
| Austin Hamer | SUNY College of Environmental Sciences and Forestry |
| Mike Krebill | Onondaga Nature Centers, Inc. |
| Deane Lavender | Oswego County BOCES |
| Charles Yaple | Cortland County BOCES |

This report would not have been possible without the assistance and efforts of:

| | |
|---|---|
| Jamon Baker | Soil Conservation Service |
| Bob Blatchley | Cortland County Cooperative Extension |
| Robert Bonazzi | Cazenovia High School |
| Jack Calvert | West Genesee Schools |

| | |
|---|---|
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| Francis Vuillemot | Cayuga County Cooperative Extension |
| Jim Vittorio | Chittenango Central Schools |
| Chuck West | Onondaga County BOCES |

And the 185 individuals who attended the 19 January, 1973, Seminar.

And, of course, none of this would have happened without the State Commission and its Chairman, Senator Bernard C. Smith. Of particular assistance in the Central New York Region has been Vice-Chairman, Dr. John A. Gustafson.

This report then is the product of many; it is a status report and a plan for action. Questions concerning it should be directed to any of the above mentioned persons or to Walker Banning, Central New York Regional Planning and Development Board, Syracuse.

Central New York
Regional Leadership Seminar

EDUCATION FOR ENVIRONMENTAL ACTION

January 19, 1973

Holiday Inn (Downtown) Syracuse

Sponsor: Temporary State Commission on Youth Education in Environmental Conservation, Senator Bernard C. Smith, Chairman

9:00 a.m. Opening remarks, Dr. John A. Gustafson, Commission Vice-Chairman

WHAT'S HAPPENING?

9:30 a.m. Small-group discussion of current regional activity in environmental education

10:30 a.m. Resumes of activity by these spokesmen, supplemented by seminar participants:

Education

Dr. John Judd
SUNY College at Oswego

Citizen Interest Groups

Mrs. Alice T. Burket
Syracuse Federation of Women's Clubs

Conservation

Millard L. Rogers
Chairman, EMTAC

Labor

John Amie, President
Greater Syracuse Labor Council

12:30 p.m. Buffet luncheon

Business

Carter B. Chase
Vice President, Crouse Hinds

Local Government

The Honorable John H. Mulroy
Onondaga County Executive

WHAT'S NEXT?

2:30 p.m. Is regional coordination a need? Dr. John A. Gustafson

Prospects for regional coordination? Martin G. Anderson, Community Resource Development, N.Y. Cooperative Extension

3:00 p.m. Discussion of opportunities, needs, required resources

4:00 p.m. Adjourn

The Commission gratefully acknowledges local assistance provided by Walker Banning and Staff of the Regional Planning Board's Environmental Management Technical Advisory Committee. Among many who contributed to organizing the Seminar, special thanks are due Austin Hamer and David Hanselman, College of Environmental Science and Forestry; Gordon DeAngelo of NYS DOT, and Martin G. Anderson, N.Y. Cooperative Extension.

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# I. INTRODUCTION

The Central New York Planning Region is composed of Cayuga, Cortland, Madison, Onondaga and Oswego Counties. Syracuse, the Region's central city, exerts a major influence on the general development of the entire region. Likewise, the Region's five other major cities (Auburn, Cortland, Fulton, Oneida and Oswego) each have their own sphere of influence. As the Region continues to shift from rural to urban in character, these cities will continue to play an important role in guiding the general prosperity of the Region. The environmental education needs of the Region must, however, focus on the special needs of both urban and rural areas.

With a land area of 3,622 square miles and a current population of over 760,000, the Central New York Region is situated in the heart of the Empire State. It is a nexus for the movement of goods and persons along the north-south and east-west axis of northeastern North America.

The lakes of Otisco, Owasco, Skaneateles, Oneida, and Onondaga empty into the Oneida River which enters Lake Ontario at the City of Oswego on the St. Lawrence Seaway. The southern rivers of the Region drain into the Susquehanna River.

There are three major topographic divisions in the Region. Northern Oswego County includes the Tug Hill plateau; the Lake Ontario plain covers the center of the Region in Cayuga, Oswego, Onondaga and Madison Counties; and the Appalachian Upland dominates the southern section of Cayuga, Onondaga, and Madison Counties and all of Cortland County. Each of these regions is distinctive in its topography and has a characteristic pattern of development possibilities and limitations.

The place-to-place variation in soil conditions is a basic parameter describing the suitability of an area for development. Other basic resource conditions which deserve special attention include steep slopes,

shallow soils, soils with low permeability, areas of high water table, wetlands, acquifer recharge areas, flood plains and shore land. Failure to realize the importance of these conditions when making locational decisions results in the commonly occurring environmental quality problems associated with expanding urban areas.

Environmental problems in the Central New York Region stem basically from man's failure to perceive the interrelations between environmental elements and man's impact on these linkages. Thus, commonly encountered problems include air and water pollution, development in flood hazard areas, the filling and draining of wetlands, the loss of agriculture and open spaces to urban areas, solid wastes disposal, erosion, the loss of acquifer recharge areas, and the destruction of unique ecosystems.

The rapid change in land use in the region brought on by urbanizing pressures is a continuing challenge to research, education and planning. The Central New York Region is fortunate in having a wide variety of formal and informal organizations which have adopted a regional-wide perspective and have become active participants in the process of meeting the constantly changing needs of our people. This regional perspective is appropriate for issues and problems which are beyond the scope of indivicual counties, yet are not statewide, and for issues which commonly occur throughout the entire region.

In 1966 the Central New York Regional Planning and Development Board was created by the five participating counties as the official governmental agency for regional planning in Central New York. Each of the five counties now have County Planning Agencies. Each county (except Madison County) also has an Environmental Management Council. There are currently twelve local conservation advisory councils; all but two of these are in Onondaga County. Syracuse is the regional headquarters for many state agencies, including the Department of Environmental Conservation,

Department of Transportation and Office of Local Government. The Metropolitan Development Association of Syracuse and Onondaga County has, in recent years, assumed a broader regional perspective. The status of regional organization and activity was greatly strengthened by the U.S. Department of Agriculture's six-year experiment known as the MIDNY Project. The Cooperative Extension agents who participated in this program constituted a ready cadre of on-the-scene professionals to educate their accustomed audiences to a sense of region and to regional planning concepts. Although the MIDNY Project has ended, Cooperative Extension is still actively involved in planning coordination and educational activities. Under an environmental ecology grant by the U.S. Department of Agriculture to the College of Agriculture and Life Sciences at Cornell, the MIDNY Project undertook a series of studies on the Owasco Lake Basin, the ad hoc Committee on Conservation Education in Central New York, a report on 1970 Earth Day Activities, ad hoc Committee on Environmental Decisions, Onondaga County 4-H High School Environmental Education Series and on Environmental Management Councils. A series of working papers were published which described each of these activities and their evaluation.

The rapidly developing pace of regional planning and development provides an excellent climate for a coordinated regional effort in environmental education. As summarized below, the 19 January 1973 meeting of the State Commission in Syracuse should be viewed not as a beginning point, but rather as a step somewhere in the middle of a continuing process of regional community education on environmental problems. The 19 January meeting does, however, represent the appropriate beginning point to re-think the educational needs of our society in Central New York.

We may begin, then, with the assumption that there exists a wide variety of local resources and actors, but that there exists no overall set of goals or plans to link the elements together. This report, then, is an attempt to outline an initial set of goals and to develop strategies to realize them. The purposes of attempting to develop stronger links between the existing

environmental education elements in Central New York is to promote the idea of environmental education and to more effectively link the producers and consumers of this type of information. Through these links, all segments of society concerned with environmental education will have a clearer idea of the resources available to help them solve their particular environmental needs. We are thus viewing education in its broadest sense as a part of total community development.

## II. The Status of Environmental Education: What's Happening in Central New York

### Central New York Regional Leadership Seminar on Education for Environmental Action

The seminar held on January 19, 1973, at the Holiday Inn, Syracuse, New York, was an attempt at bringing together representatives from various segments of society, i.e. local and state government, industry, concerned citizens, labor organizations, professional educators, students, and other individuals with an express interest in environmental education.

The purpose of the meeting was to elicit response from these people, not only as to the feasibility of a multi-faceted, coordinated program of environmental education within New York State, but also to air the various viewpoints as to how such a program could be implemented on a local level.

The seminar was sponsored by the Temporary State Commission on Youth Education in Environmental Conservation, attracting approximately 185 individuals representing over 90 groups within the state, both public and private.

It was the first such Regional Leadership Seminar in Central New York, and was a major step towards the realization of the Commission's goal of developing a

comprehensive education program which would result in an environmentally aware, enlightened, and committed public.

Format: Interaction and Response

The participants, following introductory statements by Dr. John A. Gustafson, were encouraged to gather into discussion groups, and to exchange information and ideas on the status of current educational efforts.

Following the discussion sessions, which were designed to create input for the Commission aiding in implementation of the state plan, participants reconvened for the purpose of hearing individual spokesmen for the discussion groups. This was intended to allow for dissemination of information and ideas, as it was not possible, in most cases, for single individuals to attend more than one group meeting.

Discussion Group Summaries:

1) Conservation/Local Government

   Discussion Leader: Roger Snyder, NYS Office of Planning Services

   Spokesman: The Honorable John Mulroy, Onondaga County Executive (Local Government)
   Millard L. Rogers, Oneida Lake Association (Conservation)

2) Education

   Discussion Leader: Dr. David L. Hanselman, SUNY College of Environmental Sciences and Forestry

   Spokesman: Dr. John Judd, SUNY College at Oswego

3) Business/Labor

Discussion Leader: John M. Frantz, Jr., Metropolitan Development Association

Spokesman: Carter B. Chase, Vice-President, Crouse-Hinds

4) Citizen Interest Groups

Discussion Leader: Stuart E. Hosler, Jr., Onondaga Nature Centers, Inc.

Spokesman: Mrs. Alice T. Burket, Syracuse Federation of Women's Clubs

The following is a brief summary of the major ideas expressed during the discussion groups and by the discussion leaders. Additional information compiled since the meeting has also been included to provide a more complete picture of current activities.

Conservation/Local Government

1. People should be taught practical politics so they can more effectively change the structure of society or make themselves heard. In political education lies the power to change the system.

2. Organizations should stop building walls of hostility and resentment between themselves, and begin to coordinate efforts.

3. The hands of legislators should not be so thoroughly fettered by people demanding immediate justification for expenditures so that projects which will eventually aid all people in time will be met. Environmental rebuilding, as opposed to environmental degradation, takes a long time.

4. The effect of media can make or break an environmental program. Timing, tact, and encouraging good relationships with newspapers, television, etc., can embellish rather than tarnish the environmental movement.

5. Organizations both public and private should strive to develop speakers' bureaus and other important resources for the community.

6. Onondaga County Executive John Mulroy spoke of the change in priorities of expenditures for environmental projects and listed the following examples: Beaver Lake Nature Center, Metropolitan Sewage Treatment Plant, County Air Pollution Control Program, solid waste disposal, outdoor recreation and the Canal Museum.

Education Activities:

Onondaga-Madison BOCES is now ready to teach a two-year course in Waste Disposal Technology, including segments on air pollution control; water conservation and pollution control; solid waste storage, collection, and disposal; sewage waste collection and waste water treatment; park and recreation area planning; pesticide control, and agricultural chemical application, plus other course elements. Potential students are now being informed of the availability of the course.

Onondaga-Madison has also developed several media kits on various environmental topics, including films, slides, simulation games, and other elements. These are circulated from their resource center. In Madison County a program aimed at 4th, 5th, and 6th grade students has been developed to help them develop sound ecological attitudes.

Cayuga BOCES is running a course in conservation, emphasizing elementary forest management and soil and water conservation. County students were engaged for the first time in the summer of 1972 in a Summer Program in Conservation. Participants did a weed control project at the north end of Cayuga Lake, seeded pond and ditch banks for private land owners and public agencies, completed stream bank improvements upon recommendation of the Department of Environmental Conservation and helped plan artificial farm ponds in the county. Students worked with no guarantee of remuneration and were paid as funds came from the work performed.

Cayuga BOCES owns a farm with a mixture of open fields, woodland and marsh. A five-year plan projects its development as an environmental education center.

Oswego BOCES, in cooperation with 4-H in Oswego County, has been funded for a summer study by students of Little Sandy Creek in the northern part of the county. Students will investigate various parameters of the stream environment, using guidelines approved by the Department of Environmental Conservation. Their written report will be presented to Department officials for further examination and possible inclusion in the State's Wild, Scenic, and Recreational Rivers System.

Oswego BOCES is seeking funding for an imaginative approach to career exploration for 8th grade students, concentrating on environmentally significant careers. Many careers in environmental control and improvement will be opening up in coming years and the project is an attempt to make students aware of the opportunities which will be available.

Cortland BOCES is presently putting its primary emphasis on environmental education in grades 4-6. Fourth graders are introduced to basic environmental concepts in and around their schools. Fifth graders are given a day camp experience in environmental education, and sixth graders go on an overnight campout with further environmental learning. A long-range goal is a county-wide environmental education center with programs and facilities for all the people of Cortland County.

In Tompkins County, Dryden Elementary School runs a "Science Challenge Program," with weekly workshops for small groups of students. Members of the Cornell University faculty serve as resource consultants for the program. The elementary library has drawn together print and film resources to aid in the program, as well as to provide additional environmental materials to the entire school. The school has developed an outdoor education area for use by all grades and sixth graders experience an annual overnight campout.

Most of the staff for this event are volunteers with particular skills who come from outside the school faculty.

The College of Agriculture and Life Sciences at Cornell University annually sponsors a summer field course in environmental education for teachers at Arnot Forest. The Department of Natural Resources is currently developing an environmental program for youth using self-discovery activities on man's relationship to his environment. The Water Resources Center provides extensive education.

Similarly, the College of Environmental Science and Forestry at Syracuse University offers various skill courses for teachers in the summer, such as use of map and compass, elementary surveying, background in forestry and timber management and similar topics. It also sponsors adult evening education, seminars and tours, a speakers bureau and an environmental film library as well as a variety of programs for research in environmental education.

Syracuse University is offering this summer an Environmental Studies Institute for twenty science teachers and twenty social studies teachers from the northeastern states with funding provided by the National Science Foundation. The Environmental Studies Institute at Syracuse University works in collaboration with local schools and interest groups, maintains an environmental film library, holds a summer institute in science and social science with emphasis on ecology and geography, conducts off-campus workshops in environmental education, holds an eight-session adult education program on "Environment and Human Future."

The programs at Cornell and Syracuse are excellent, but their chief drawback is that they do not reach many teachers in the large area from which they draw.

The Rogers Conservation Education Center at Sherburne is on the edge of the region in Chenango County.

It offers a variety of programs to a wide audience, and affords the opportunity for extended environmental studies using overnight accommodations. It provides services for educating teachers in environmental activities. Beaver Lake Nature Center near Baldwinsville in Onondaga County is a unique molding of county ownership of the land and facilities with private funding of programs through a group called Onondaga Nature Centers, Inc. Beaver Lake has an extensive on-sight and off-sight educational program with the Syracuse schools and receives a large visitation from the general public.

Other activities mentioned included the following:

1. Syracuse Junior League: proposal up for consideration of hiring traveling naturalist to inner city schools in cooperation with Beaver Lake Nature Center.

2. Oneida County, Department of Environmental Planning: maintains a library of current environmental materials.

3. Green Lakes Outdoor Education Center: in cooperation with Syracuse City School System under a federally funded program teaches mathematics and reading in an outdoor situation.

4. Cazenovia High School: activity oriented program for personal experience of nature.

5. Canal Museum, Syracuse: in cooperation with Roger's Nature Center is working on an interpretive handout for canal visitors and sign posting.

6. Onondaga/Madison BOCES: planning to teach a course in waste disposal technology which will be a two-year course in occupational orientation and development for youngsters.

7. Baldwinsville schools: developed their own nature center, now threatened by "higher" economic use.

8. Hiawatha Council of Boy Scouts: program for visiting industries and preparing questions about production, waste disposal and costs and benefits to society of such industries.

9. Union Springs School Board: distinction of having state's first school board policy statement advancing goal of environmental education. (Appended)

10. Liverpool Schools: an interdisciplinary approach to Environmental Education, a reclamation project in cooperation with the Army Reserve and a student program of environmental improvement.

11. East Syracuse-Minoa Schools: program of environmental education for K-12, including local environment course, law, ecology and advanced science research.

12. Dairy Council of New York: offers a course entitled "Big Ideas in Nutrition" where environmental issues are brought into the picture.

Many elementary and secondary schools in the region have programs in environmental education in great variety. Their presence seems to depend mostly on the interest and dedication of those teachers who devote sufficient energy and skill to make them happen. The programs are run with the permission of school administrators and boards of education, sometimes with their blessing, but seldom as a matter of educational policy or philosophy. Consequently, when teachers dedicated to the programs leave for other positions, the programs usually collapse because no-one else picks them up and keeps them going.

The picture one gets of the Region is that many things are being done in various educational institutions. There is little coordination and trading of information back and forth and consequently there is the suspicion that much talent is being wasted or underutilized and that efforts are being needlessly duplicated.

Labor and Industry:

The following questions posed by representatives of industry for group consideration were felt to be necessarily answerable for a real understanding of environmental issues:

1. Can environment be utilized without some form of degradation?

2. How does the law of diminishing returns interact and affect pollution abatement?

3. Are teachers qualified to be non-biased instructors in environmental education?

4. Are educators truly naive as to the real profit margins of big business?

5. What is the role of Government; what is the role of Industry in caring for the environment? What part can each best play?

6. What is the history of environmental control efforts? What laws do we now have?

7. Is "zero discharge" (literally) technically or economically feasible, or even desirable?

8. Do the efforts of single nations (or states, or towns) have any effect? What about world trade?

9. If an air pollution problem is solved, are other problems created?

10. What is the present state of the art in environmental technology?

11. What is technical obsolescence in industry? What are the long range effects and benefits in terms of natural resource use if pollution contro is accelerated?

12. In general, how does the environmental question pervasively affect nearly every aspect of human life?

13. Can national fuel and packaging policies help aid the environment?

Mr. Carter Chase, vice-president of Crouse-Hinds, reinforced previous ideas of business' concern with environment and expressed apprehension concerning projected population increase in this area of the state and its reflection in increased demands for housing, employment and recreation.

He asked that formal education not become a forum for propaganda and gave an illustrative example of how good industry fosters pollution abatement because it results in more efficient utilization of a resource, input, or raw product.

Citizen Interest Groups

A list of Citizen Action Groups concerned with environmental issues will be compiled and made available in the near future. Because of the great magnitude and various concerns of each organization, its inclusion in a text of this nature was not considered practical.

Discussion Group Spokesmen: Synopsis of Major Ideas

1. Is it possible with such a complex issue as environment, to entrust solutions, education, and other responsibility for awareness to the media and various conservation groups alone, or, is a formalized program of environmental education necessary?

2. In addition to youth education, it is necessary to educate adults right now to help them make vital decisions right now!

3. Enabling legislation and funding for environmental programs must be forthcoming or attempts at stabilizing the environment and preventing future degradation will fail.

4. Industry is not the opponent of a healthful environment, but is, in fact, dependent upon a sound environment for its very existence.

5. The Commission's environmental education plan must take the middle road between a governmental mandate for action and a half-hearted attempt at implementation. Everyone must be committed to the success of the venture.

6. The level of consciousness on human need must be raised, so that in any consideration of environmental issues the human resource takes precedence.

7. In dealing with minority involvement in environmental education, the efficiency of "storefront nature centers" is questionable, while the need for remedial action is undeniable.

<u>The Commission's Draft Environmental Education Plan - Reactions:</u>

The Commission's draft environmental education plan was distributed and reviewed, and the express need for local and regional coordination for its success was reiterated.

Martin Anderson from Cooperative Extension explained that coordination was difficult to achieve for a variety of reasons including:

1. A skeptical public
2. The existence of overt or subtle territorial boundaries which organizations or individuals establish; difficult to traverse or surmount without understanding and cooperation
3. The entrenchment of an unresponsive bureaucracy resistent to change

The final period of the seminar was an open forum wherein questions about the environmental education plan and its implementation could be directed toward members of the Temporary State Commission, and toward Senator Bernard C. Smith, Chairman.

The majority of questions hinged on the aspect of mandating change, which was felt by the Senator and other members of the Commission to be undesirable, the idea being to convince people with a preponderance of logic, rather than overwhelm them with a body of instructions and rules.

The seminar was then adjourned with some interesting feedback on the seminar and environmental problems provided by an analysis of questionnaire reponses.

Questionnaire Analysis:

An analysis of 27 questionnaires produced the following data (an admittedly low number of completed forms, but interesting nonetheless).

In each case, the number following the type of answer is the number of individuals who answered identically or similarly. When the total number exceeds 27 it is a result of one or more individuals giving more than one answer.

Question 1a - Describe the main environmental education program in which you are involved or have high interest.

A. Private organization or citizen interest group (9)
B. Local or county government group (6)
C. State Government organization (4)
D. Federal program (2)
E. School program as an educator (6)

Question 1b - In this program, what are plans for the next three years: expansion, maintenance of status quo, phase out?

A. Expansion (20)
B. Maintaining-holding steady (4)
C. Phase-out due to decreased demand (1)
D. Phase-out due to lack of funds (2)

Question 1c - What types of resources (personnel, funds, material, etc.) appear most limiting to achieving future plans in this program?

A. Funds (16)
B. Coordination and Cooperation (5)
C. Personnel (5)
D. Fear of controversy (Planned Parenthood or population control) (2)
E. Size of existing facility (1)
F. Materials (1)

It may be interesting to note here that from the above data it is quite evident that people involved in or concerned with a broad spectrum of environmental programs are desirous of either expanding their services or maintaining their present status. The limiting factor for most of those queried was funding (16).

Question 2 - In this 5-county region what do you feel is the single most important resource required to truly advance environmental education?

A. Coordination & cooperation (7)
B. Funds (5)
C. Attitude of Stewardship (2)
D. Experience (1)
E. Enabling legislation (1)
F. People (1)
G. Recognizing the problem of pollution as one of human behavior (1)
H. Commitment (2)
I. Informed teachers (1)
J. Regional organization composed of qualified staff (1)
K. Education to overcome "environmental illiteracy" (4)
L. Population control (1)

Question 3 - What is your reaction to the Commission's draft plan for coordination?

A. Positive-Approval (22)
B. Negative (2)
C. Dubious (1)
D. No answer (2)

Question 4 - What special subjects might the Commission include in its new report that would be of particular help to you?

A. List of people, agencies, services and addresses (9)
B. Major environmental programs in the area and new innovative ideas being used successfully (2)
C. List of volunteer groups (2)
D. List of colleges and courses on environment offered (2)
E. List of speakers bureaus (1)
F. Progress reports on Commission advancements (1)
G. Lists of conferences and workshops in Environmental Education (2)
H. List of legislation in environment (1)
I. Population education (1)
J. Dictionary or Glossary of Environmental terms (1)
K. Local clearinghouses for conservation education (1)
L. List of green space available in city, county, type of use allowed (1)
M. No answer (5)

## III. Regional Needs in Environmental Education

> The goal of environmental education is to bring home to every citizen, so that he knows it deep in his heart and bones, the simple facts -- that he is absolutely dependent upon his environment, that he is affected by his environment, and that he affects his environment.

We should recognize from the start, that it may be impossible to accomplish that desirable goal with every

segment of the populace, and therefore sort out those segments of the public with which we can expect to make the greatest progress within the shortest space of time, and on a reasonable priority schedule.

As guide lines in developing acceptable specific objectives of environmental education, we might use four which were developed in a graduate seminar in the School of Natural Resources at the University of Michigan several years ago. These are:

1. A clear understanding that man is an inseparable part of a system, consisting of man, culture, and the biophysical environment, and that man has the ability to alter the interrelationships of this system.

2. A broad understanding of the biophysical environment, both natural and man-made, and its role in contemporary society.

3. A fundamental understanding of the biophysical environmental problems confronting man, how these problems can be solved, and the responsibility of citizens and government to work toward their solution.

4. Attitudes of concern for the quality of the biophysical environment, which will motivate citizens to participate in biophysical environmental problem-solving.

The effective participation by all segments of our society is necessary to integrate environmental education into the total community development effort. The resource and organizational needs to accomplish this task will vary with the specific goals and objectives of each segment of society. Thus the professionals in conservation, local government officials, school teachers and administrators, business and labor groups and private citizen interest groups can all be expected to have slightly different needs.

Besides increased funding, the most pressing needs which have been expressed are for closer coordination and cooperation. It is felt that the lack of these two important elements has delayed the start of some projects and frustrated the efforts of other projects underway because the people involved did not know where to turn for information and assistance. The fulfillment of this need could also help avoid any needless duplication of efforts to solve a common problem. In most cases today, coordination and cooperation takes place through informal contacts and through the involved individual who is active on more than one project or in more than one area. However, the outsider who is concerned, but not involved, has difficulty knowing the full range of current activities and this may be one reason he is not involved.

The following list of regional needs has been compiled from a variety of sources and is included here as an expression of the needs and frustrations of those involved in environmental education and to help guide future action.

## Regional Goals for Environmental Education

### Education -- public schools

1. Inservice training for teachers.

2. Education curricula that are relevant -- related to real world; programs that develop sensitivities, as through outdoor education; real-life experiences; attention to approaches and methods that stimulate interest and the desired action.

3. School board policies (as at Union Springs, Cayuga County) calling for this education. Introduce statement to all boards in the region; work for its adoption.

4. For youth, strengthen school-to-out-of-school ties with youth organizations (4-H, Scouts, etc.) and with adult organizations having youth programs, e.g. Kiwanis.

Regional Communication and Coordination

1. Have a regional organization to provide coordination and an individual to perform the role of regional coordinator to facilitate program development and integration. Other new types of regional staff might be "regional educators" (one or a team) to train teachers, support teachers, and the like. Improved intra-communication among environmental educators.

2. Provide a regional center for information exchange -- the clearinghouse concept. One important role would be to screen proposed legislation and inform on pertinent items. Improved intercommunication between environmental education groups.

3. State funds are required to help develop education centers -- not just the region-wide center but local ones. Best funding basis is to cost-share with localities, thus insuring a local commitment is made.

Remaining goals, not grouped

1. More use of TV and other media.

2. Generate funds, especially within the region.

3. Develop more outdoor education centers.

4. Make ultimate goal of all environmental education, "Education for action", for youth and adult programs.

5. Establish a lobby or make existing lobbies more responsive.

6. Meet the problem of melding (or addressing) the range of philosophies in a community on environmental matters.

7. Get state agencies moving in leadership and support of environmental education through simple, effective state-level coordination.

These fourteen goals should not be considered a definitive list, but rather a starting point for discussion and action.

## IV. Pathways to Regional Goals

### A. The Community Decision Making Process

Environmental education is only one component of total community development. The following discussion of proposals for regional organization therefore begins with an explanation and diagram which describes the decision making process on major community problems in Central New York and which formed the basis for the MIDNY Project's educational activities. It predicts that:

1. A community will be influenced at any point in time by a variety of conflicting problems--- such as economic growth, social concerns (welfare), and environmental quality, in this example. Decisions made about these matters are heavily influenced by values of the decision maker, and his constituents. Knowledge about these values, and major contemporary problems, is critical to planning for community needs.

2. Public decisions are forced by conflict and stress. This stress is reflected by "issues" which emerge from time to time. These issues are revealed by mass media coverage of community happenings and by personal acquaintances with "informal leaders."

3. Numerous public agencies are forced to respond to issues (or become irrelevant and vulnerable to reduction in program funding).

Legend

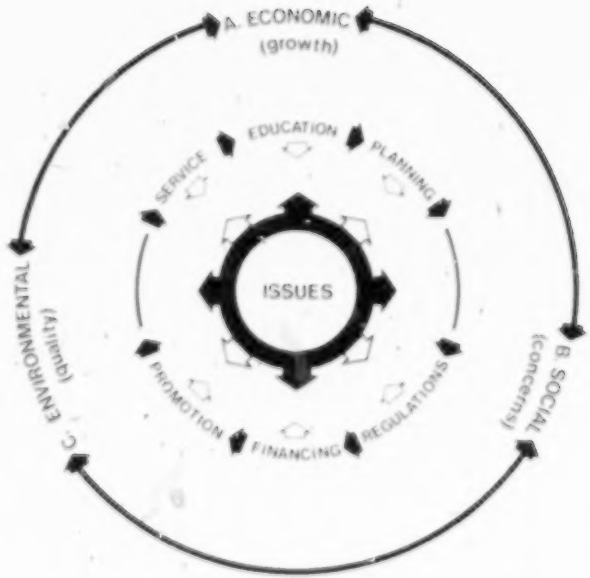
A., B., C.,--conflicting societal values that must be weighed in making major decisions

A. Economic (growth)-- production, employment, expansion, rising standard of living, material goods.

B. Social (concerns)-- decent housing, education, adequate food, a job, a minimum standard of living for all.

C. Environment (quality)-- clean air & water, outdoor recreation, attractive communities, protection of wild species, population balance, life style diversity.

Governmental response ---
Education
Planning
Regulation
Financing
Promotion
Service




Issues--the catalyst that stimulates movement - creates conflict

A CONCEPT OF REGIONAL DEVELOPMENT

These responses reflect the primary functions of the responding agency. In Central New York these were identified by the MIDNY staff as that of planning, regulation (enforcement), financing, promotion, service and education.

4. Friction and competition provides a favorable climate for interagency communication, which can be brought about by a community educational process. The ad hoc committee approach utilized by MIDNY seemed effective.

5. Ad hoc committees focused on specific problems with short range objectives -- resolving a solid waste management problem, organizing agricultural districts, forming environmental management councils, setting up a non-profit low-income housing corporation, etc.

Of equal importance, planners and other agency professionals learned how to work together in problem solving. They developed a planning process that was effective in meeting community needs. It was problem oriented, and structured to alter agency priorities, problem-solving processes and outmoded goals and objectives. It pressured agencies to adjust program efforts to more effectively deal with contemporary problems.

The model developed by the MIDNY Project seemed effective in the Central New York urbanizing region. It was further tested in southern Illinois during the winter of 1971-72 and determined to be relevant to a more rural, economically depressed planning region.[1]

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1. For details see MIDNY Case Study #11, Testing the MIDNY Project Pilot Results in the Greater Egypt Region of Southern Illinois; a fifteen page mimeo, by Martin Anderson, 633 Midtown Plaza, Syracuse, N.Y. 13210.

Since this report is only an initial attempt to outline the future of environmental education activities in Central New York, only the special organizational needs of the public education sector and of citizen interest groups are discussed below.

B. An Expanded Role for B.O.C.E.S. in Environmental Education

Are the facilities and staff of BOCES organizations a natural focus of environmental education activities? The present function of the various BOCES units is to provide shared services to school districts. Their physical facilities are available to schools and to citizen groups for seminars, meetings and other kinds of gatherings. Many are placing environmental educators on their staffs and these people can serve as enablers and catalysts for local and county-wide programs in environmental education.

A limitation on the effectiveness of BOCES units is that they presently can receive no state aid for summer programs and projects. It was reported that there is a proposal before the Legislature this session to provide state aid for school district summer programs. Could the legislation be written to make it possible for districts to contract with their BOCES for summer services? This would allow some creative undertakings in environmental education to take place in the summer months--months which offer great freedom for experimentation and easy access to the out-of-doors, but which are presently utilized in only limited ways.

Another unanswered question: Are there ways to meld county, Cooperative Extension and BOCES funds for environmental education? Beaver Lake is an example of cooperation between county government and a private group. Could other such cooperative combinations be devised?

Do we perhaps need a regional information vehicle? The function would be to collect and distribute information pertinent to environmental education. A

publication (newsletter) might be in order. Perhaps a library of useful materials could be maintained, including information on educational programs used in various parts of the country.

A regional structure of some kind might be of value. It might take the form of an advisory committee on environmental education in public schools which could take under its wing useful tasks such as the regional publication and library. Its functions should be flexible. Perhaps it could serve to pull together different groups at different times for consultation and education. It might organize seminars on various aspects of environmental education for such groups as chief school officers, teachers, environmental educators, school board members.

Unanswered is the question of how to effectively tie in the personnel and skills of Cooperative Extension, Soil Conservation Service and 4-H to the task of environmental education.

Retired people are a valuable resource in environmental education. Could they be located and their names, addresses and skills be made known region-wide?

To what extent are State Parks in the Central New York region available for environmental education activities by BOCES, local school districts and others?

Could BOCES organizations or a regional advisory group make it possible to present teacher training courses on what would amount to a cooperative extension basis? This would be a way in which the fine programs at Syracuse and Cornell's Arnot Forest could be made available to a large number of teachers in their own areas.

C. An Expanded Role for County Environmental Management Councils in Environmental Education

The Onondaga County Environmental Management Council has become a model for Central New York of vigorous leadership and action. The Council is undertaking a

program of public information and education (including a newsletter, bus tour, slide presentation and publication of a County Natural Resources booklet). The council has completed a survey of the status of environmental and outdoor education in public elementary schools. It is actively preparing a County Environmental Plan and an environmental evaluation system to review the impacts of proposed developments.

Most important for our consideration in this report is the Council's assistance to towns and villages in establishing municipal conservation commissions, assisting newly created commissions in organizing their work programs, working on projects of mutual interest and coordinating activities with the Association of Conservation Commissions. Given the large public information and education program and the kind of assistance currently being offered to municipal conservation commissions, the Council is in a position to expand its services to provide coordination and communication support to private citizen interest groups. The Council is thus viewed here as the logical center of attention for linking the activities of public and private environmental groups at the county and municipal level. It is recommended that the Council actively discuss with other major county-wide environmental groups (such as CAPE and Save the County) how they might better fill the communication and coordination gap which currently exists. This has been one of the most consistently mentioned needs of these local groups and warrants the immediate attention of the Council. It is also recommended that the other County Environmental Management Councils study the Onondaga Council as a model to see if it meets their local needs.

D. Formats for a Regional Environmental Education Committee

1. Recommended approach, organization, time-frame

Regional goals must be achieved by existing groups (government, business & industry, schools, organizations, etc.). No single organization exists in

the region with sufficient funds, personnel, or ambition to do an effective job of reaching every corner with environmental education. And New York has enough bureaucracy and taxation now that to advocate a super-organization would be heretical.

What kind of an approach can be used in getting these groups to carry out regional goals? The logical approach is to seek the input of the groups from the very beginning, so that they have a hand in formulating regional goals. (This has been fairly well accomplished by inviting representatives to participate in the preparation of this report) Secondly, each group's representative must take the goals back to his group and see that they are adopted and that plans are derived to meet the goals. Finally, his enthusiasm and drive must be such that his organization or administration will carry out the plans with the whole-hearted support of the members.

One of the keys to success in this approach is the degree to which each group internalizes regional goals. Ideally, achieving regional goals should not present the prospect of more work for the group, but of the same amount of work. Everyone seems to have enough to do without additional burdens -- no matter how purposeful -- being required of him. A way of integrating regional goals into the modus operandi of an organization without creating extra work is through substituting them for something else, hopefully something of a similar nature. Because of this, the representative is in a strategic position to effectuate the regional goals for environmental education. His importance should not be underestimated. He should be given all the materials and input that the needs to do his job. And, there should be a follow-up to see that he accomplishes his mission.

To assist group representatives, a regional environmental education committee is proposed. Its membership would be composed of the representatives assembled to formulate the region's goals, plus others deemed essential in carrying out the goals. The committee would meet in April and May of 1973 to get the

organizational program underway, and would meet quarterly thereafter. It would be dormant until needed to review progress towards the goals and would carry out any modifications deemed essential.

A handicap to environmental education that is often cited by groups is "the lack of funds." Using regional goals and priorities as a guide, a regional committee could, if desired, serve as a clearinghouse for funding proposals to state and federal sources, or could possibly submit proposals of its own. Both state and federal agencies favor proposals that fit into a regional master plan and which originate with a consortium of groups working together.

The regional committee and group representatives, then, are envisioned as the means for accomplishing regional goals. As a summary, the duties of each are spelled out below:

Duties of each representative

1. Help formulate regional goals
2. See that the goals are integrated into his group's plans
3. Make sure that the goals become translated into action

Duties of the regional committee

1. Produce a regional plan for environmental education
2. Assist and supervise representatives in effectuating the plan
3. Serve as a clearinghouse for proposal review, if desired

2. A Committee of Representatives for Cooperative Effort in Community Involvement

If the committee were to consist of representatives from every group in the region with an interest in environmental education, it would be too large to be an effective working committee. As a compromise,

committee members should consist of representatives from groups with a major interest in environmental education, and representatives from amalgamations of groups. Those groups not represented in one way or another should be informed of the regional plan through the mailing of an abstract and through the media. Among groups having a major interest in environmental education, and amalgamations of groups in the five-county region are:

Schools:
1) The B.O.C.E.S. (Board of Cooperative Educational Services)
2) The Syracuse City School District and other school districts not allied through B.O.C.E.S.
3) Private and parochial schools.
4) Colleges and universities in the area, including Cooperative Extension.

Local Government/Conservation:
1) Elected and appointed officials.
2) Planning boards.
3) Health organizations.
4) Environmental management councils and conservation advisory commissions.
5) Conservation agencies.

Citizen Interest Organizations:
1) CAPE (Coalition Advocating Protection of the Environment).
2) Onondaga Nature Centers, Inc.
3) The Boy Scouts of America, The Girl Scouts of the U.S.A., Camp Fire Girls, 4-H Clubs, etc.
4) Garden Center Association of Central New York.
5) Onondaga Audubon Society and other Audubon groups in the region.
6) Federation of Sportmen's Clubs.
7) Federation of Women's Clubs.
8) League of Women Voters.

Business/Labor:
1) Metropolitan Development Association.
2) Manufacturers Association.

3) Home Builders Association.
4) Building Trades Council.

Media:
Radio, TV, Newspapers.

By assembling a series of groups to help formulate regional needs and goals, and by helping to produce this report, one of the major steps towards "total community involvement" in environmental education has already been taken. If a few more representatives can be added to this group (thus forming the regional committee), and each representative is armed with a copy of the goals to take back to his organization for inculcation, then a big part of the coordination necessary will have been done.

One of the remaining hurdles is dissemination of the goals to groups not represented. That need not be a stumbling block if several communication techniques are employed, rather than just one.

The measure of success will be the extent to which the target groups accept the goals as their own, develop plans to reach the goals, and carry them out. The prospects for this happening on the local level are good, given proper leadership, communications and organization.

3. Organizational Diagram: An Elaboration on the Basic Structure

There are many possible elaborations on the basic structure proposed above. There are also many possible ways to graphically represent organizational structure. The proposal diagramed below elaborates on the basic proposal by adding a regional coordinator and small staff or advisory service. The regional coordinator would:

a. Keep the council informed of state developments in environmental education.

b. Coordinate the effort between all segments of the community.
c. Set up (initiate or upon request) seminars on environmental education.
d. Work with specific groups (such as school systems, etc.) to implement and establish environmental programs.
e. Establish teacher workshops through school system - industry - college and university - local government, etc.
f. Establish the council as a dynamic body which responds to the needs generated by the members.
g. Actively give leadership to and encourage the council to insure its viability.

It has been suggested that the functions of the regional coordinator could be fulfilled by a Regional Environmental Educator within the Department of Environmental Conservation.

The merits of both proposals should be considered by the Regional Environmental Education Committee.

Advisory Service or staff would provide the input to the citizens either directly or through the six types of input groups. They would teach teachers, work with media to produce environmental education information, work with citizens groups to provide input to their programs, etc.

The Advisory Service personnel would be available to bring information about the environment where ever needed. They and the coordinator would be paid professionals.

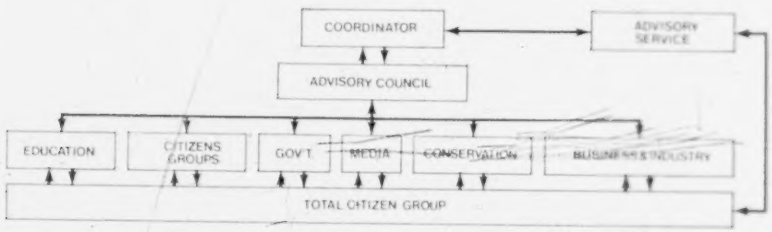
The regional committee which will meet regularly with the coordinator, will administer the environmental education program. Specifically:

a. Bring suggestions, requests and concerns of the specific segment of the community they represent, to the attention of the committee and the coordinator.

b. Request services (workshops, etc.) which are deemed necessary by the community segments they represent.

c. Act as a liason between the total environmental effort and the segment of the community they represent. They would be responsible for getting the information on what is being done to those in their specific segment of the community.

Representatives on the regional committee would most likely be chairman of committees representing their own special interest groups. Thus when these chairmen meet together as the regional committee they would each be acting as a representative or spokesman of the special needs and problems of their constituency. Together they would be the Central New York Regional Environmental Education Committee (or Council).




REGIONAL ENVIRONMENTAL EDUCATION COMMITTEE (or COUNCIL)

E. Suggestions for State-Wide Programs

1. A State Advisory Committee on Environmental Education

A permanent, nonpolitical State Advisory Committee on environmental education is needed. The Committee would serve in an advisory capacity to the New York State Commissioner of Education and his staff.

Their primary responsibilities would be:

a. To formulate and recommend state wide policies in environmental education having to do with --
   1) Curriculum developments
   2) Essential standards of instruction
   3) Teacher preparation
   4) Evaluation of materials and aids

b. To encourage and help develop a sympathetic understanding of environmental education problems, especially among school administrators and teachers.

c. To coordinate resources and services to schools in cooperation with other agencies and organizations providing environmental education materials and services.

The membership of the Environmental Education Advisory Committee should be representative of professionals in environmental resources management, environmental education, professional educators from the elementary, secondary and administrative levels of the public schools, school superintendents, educators from universities engaged in teacher education, conservation organizations and civic organizations which are strongly oriented toward environmental education or conduct environmental education programs. Appointments to the committee should be made by the governor. It is recommended that such organizations as the New York State

Conservation Council, the New York State Outdoor Education Association, the National Conservation Education Association and the several professional educational associations for teachers and administrators select their own representatives to be named to the advisory committee.

A budget should be available to the committee to provide travel expenses for individual members to carry on the work of the committee. It is not anticipated that committee members would be paid for their work, but rather that the institutions, agencies and organizations which they represent would authorize them to perform committee work on their regular time.

It is strongly recommended that effective environmental education consultant services be provided in the State Department of Education and that a full time environmental consultant be appointed as a staff member. This individual should be an experienced teacher with a combination of education and experience in environmental education work. His primary responsibilities will be:

a. To serve as consultant and advisor in developing a curriculum well adapted to the needs of elementary and secondary schools and supportive of the policies and recommendations of the advisory committee.

b. To encourage, organize and conduct environmental education training sessions and workshops for teachers, school administrators and teacher-education institutions.

c. To help develop an instructional resources center for environmental education at both the state level and at regional levels and to develop a system through which such materials become available to teachers.

d. To serve as secretary for the Environmental Education Advisory Committee, provide the necessary clerical assistance for it, and to work cooperatively with the Advisory Committee for the improvement and development of environmental education in the school systems of New York.

2. Organized Summer Camps

A second aspect of environmental education should deal with youngsters attending organized summer camps operated by such organizations as Boy Scouts, Girl Scouts, Camp Fire Girls, 4-H, Church denominations, YMCA, YWCA, and perhaps even the privately operated camps. A large portion of campers would fall into the age class between 8 and 15 years. Many of these youngsters come from urban and suburban areas, and should be considered disadvantaged in terms of environmental education. They are attracted to summer camps partly because of the recreational program offered, but partly because of their enjoyment in camping in the outdoors. Some of their enthusiasm might be directed toward learning more about the environment and the factors of which it is composed, their dependency and impact upon that environment. A well directed program in each summer camp, staffed by competent environmental educators, could reach from 50 to 75 thousand youngsters each summer. Such a program would have the potential for changing the attitudes and behavioral patterns in such a way as to make a marked improvement. Many of the camps now operating in New York State are located in areas which provide an ideal outdoor laboratory-learning situation. These could be used as teaching sites if the proper program were developed.

It is proposed that the State Department of Environmental Conservation, Division of Educational Services, develop and implement an environmental education program for organized youth camps in New York State. The program should be developed in cooperation

with member camps of the American Camping Association, N.Y. Chapter. In this way, the policies, objectives, methods of implementation and expenses could be mutually agreed upon. Visits to camps by the environmental educators employed by the Division of Educational Services would be scheduled well in advance and approved by each camp to be visited.

In general, the program would be operated by the Division of Educational Services under the direction of a coordinator. The coordinator would be responsible for program development in cooperation with participating organized camps and for implementation. He would recruit and train the seasonal employees who would be the teacher-naturalists and would provide necessary supplies and equipment, transportation and expenses. The number of teacher-naturalists needed for the program would depend upon the number, size and location of participating camps and the intensity of programs to be offered.

As an example, let's assume that 100 summer camps of various types are participating in the program. Each camp has a seven-week operating season starting July 8 and ending August 24. A new group of campers arrive each Sunday afternoon throughout the season.

A schedule is set up to provide teacher-naturalist services for two days each week to each of these camps. Each teacher-naturalist is given a travel schedule which would put him into his first camp on Sunday evening to be ready for his teaching assignments on Monday. He would normally work through each day with successive groups of about 25 youngsters or a total of 150-175 per day if he devotes one hour to each group. In many cases, he would have as much as two hours per group, or would work with some groups on successive days so as to work on projects. In a camp with 250-300 campers per week, it is possible to work with about 75% in two days. In smaller camps, one might be sufficient, whereas three days could be spent in larger camps. The teacher-naturalist moves

to each camp in time to start his teaching day as early as possible. Scheduling to avoid conflicts with swimming periods, day-long hikes, etc. is important. One teacher-naturalist could be expected to visit at least two camps per week, perhaps three, and work with 600-700 youngsters each week. His total for the season might be between 4000 and 5000. A staff of 8 to 10 teacher-naturalists would probably be needed for even a modest program in New York.

The costs of such a program are expected to be relatively modest, probably not more than $1800.00 per season per teacher-naturalist for the season. A qualified teacher-naturalist should be employed for a minimum of 8 weeks, one of which would be spent undergoing intensive training on methodology and techniques, basic concepts and materials.

Salary for camp counselors now being recruited for DEC Conservation Camps is $1,235 for 9 weeks. Teacher-naturalists should receive about the same. In addition, they would have some travel expenses, including car mileage, of about $600 average for the season. In all cases, the camps would feed and house the teacher-naturalist at their expense while he was in camp. Only in rare cases would the man have more than an occasional motel expense or a lunch or dinner enroute.

The advantages to this type of a program are:

a. Youngsters in the age group 8-15 years, who are not otherwise reached with an environmental education program, are given at least an overview of conservation concepts in an outdoor laboratory-learning situation.

b. The numbers of youngsters who can be reached in organized camps far surpasses the numbers who can or would attend a Conservation Camp, and they are the kinds of youngsters who should learn more about the environment.

c. A cooperative program involving many youth organizations gets better exposure in more communities, and the educational services offered by DEC become more visible.

d. Costs are kept moderate because of the use of seasonal employees for the 8 week period, because the expense of employee maintenance is shared by participating camps and because DEC has no capital expenditures for property, buildings, major equipment, cooks, caretakers and other maintenance workers, or similar costs in connection with this program.

e. Supervisory overhead is minimal -- one person with secretarial assistance should be able to perform all the preliminary planning and scheduling in cooperation with representatives from camping organizations. Recruiting, training, supervision and performance evaluation should also be handled by one supervisor.

## V. Summary

This report has summarized the 19 January 1973 Seminar on Education for Environmental Action as a way discussing in brief form the current status of environmental education in the Central New York Region. The outstanding regional needs and goals have been presented and some suggested means of meeting these needs have been discussed in detail. These links between organizations are proposals for discussion and action in the immediate future. It is suggested that the BOCES organizations are in a logical position to assume a large role in environmental education in public schools. The County Environmental Management Councils are recommended to expand their role and help private

as well as public citizen environmental action groups cooperate and coordinate.

In addition, a Regional Environmental Education Council (or Committee), composed of representatives of interest groups is urged to form immediately. Finally, this report concludes with suggestions for a State Advisory Committee on Environmental Education and some thoughts on organized summer camps.

APPENDIX

A POLICY STATEMENT ON ENVIRONMENTAL EDUCATION
Adopted in 1972 by the
Union Springs Central School Board of Education
(Cayuga County)

The school board recognizes that conditions must be maintained in our Nation and world by which man and nature can continue in future generations to exist in productive harmony. In an era of accelerating population growth, with growing demands for food production, home construction and consumer goods, solutions to the problems of concommitant growth in environmental deterioration will pose a major challenge to our graduates of the '70's. Students who have been sensitized to these problems and motivated to constructive, responsible action, however, hopefully will contribute to a quality of life improvement -- rather than its desecration -- in the last quarter of this century. In the words of Thomas Jefferson, "The face and character of our Country are determined by what we do with America and its resources...". In cognizance of the need for responsible attention to the problems associated with resource use and abuse, the board herewith commits itself to the support of environmental education in our school system.

The goal is to assure the learning of a set of values that will lead every student to accept responsibility toward his natural surroundings and view the primary role of man as being the steward, rather than the master, of his natural resources and physical environment.

The following suggestions are offered as guidelines for the development of programs to implement this policy.

1. Each teacher of every subject at all grade levels is encouraged to reinforce his or

her understanding and appreciation of conservation and environmental issues, through individual initiative and effort and through school board-supported inservice programs.

2. Within the bounds of individual teaching style and subject choice preference, teachers of all subjects and levels are encouraged to weave environmental concerns into other subject matter in ways comfortable and satisfying to the teacher and meaningful and relevant to the students.

3. Students should be encouraged to interact with one another and their teachers, sharing their observations and opinions on the need for wise, compatible uses of our air, water, soil, fuel, forest, mineral, wildlife and human resources, and where appropriate, to develop their attitudes of awareness and concern into meaningful and constructive action. The need for both social sensitivity and technical competence should be kept clear, however, and students should be caused to respect the complex social, economic and political constraints on the dynamics of change. Emphasis should be on rational, constructive and respectful problem analyses and solution syntheses.

The administration shall assist and support the teaching staff in developing and coordinating programs and activities relevant to environmental education and the district principal shall schedule for board review in the month of October an annual report of past and planned programs and activities, drawing upon the school principals, teaching staff and students, as ever their participation may be judged desirable.

Note: The preceding statement appeared in the Congressional Record, on July 20, 1972 upon introduction of U.S. Representative John H. Terry of Syracuse. It is of special interest because it is the first in our state.

In a letter to the Union Springs Board, State Education Commissioner Ewald B. Nyquist said, "I am particularly pleased with the philosophy expressed in your statement. Hence, it follows that an interdisciplinary approach to teaching environmental education is a practice which has considerable promise."

William D. Ruckelshaus, Administrator, Environmental Protection Agency, noted in a letter to Congressman Terry that, "The Board's 'Policy Statement on Environmental Education' is a remarkable one and one which I would hope might set a precedent for school districts around the Nation."

# A VIEW TOWARD COMMUNITY-WIDE

# ENVIRONMENTAL EDUCATION

For the Genesee/Finger Lakes Region:

Genesee
Livingston
Monroe
Ontario
Orleans
Seneca
Wayne
Yates Counties

Prepared for the Regional Community
by
The Steering Committee
for
The Environmental Education Forum

March, 1973

ACKNOWLEDGMENTS

Special recognition and appreciation to those who insured success of the Environmental Education Forum and encouraged the View of Environmental Status and Needs Report:

Senator Bernard C. Smith, Commission Chairman and Forum Chairman

Dr. John A. Gustafson, Commission Vice-Chairman and Forum Keynoter

Mr. William Haley, Program Director, Channel XXI and Forum Moderator

Mrs. Madelyn Larkin, Writer, Publicist

Mrs. Marcena Ver Ploeg, Writer, Publicist

## PREFACE

Changing human behavior and attitudes, and the restructuring of the public's priority of values should be basic to all environmental education efforts.

At the outset, let it be understood by the reader that the following is a view of status and needs for community-wide environmental education. The substance of the regional view is based on the proceedings of the Environmental Education Forum sponsored by the New York State Temporary Commission on Youth Education in Environmental Conservation chaired by Senator Bernard C. Smith on January 25, 1973.

The view is incomplete as were certain segments of regional representation at the Forum. Guidelines are set forth, but there are gaps and missing links in several sections. What IS important is that a beginning is made and a challange is extended. Will the reader be motivated by this imperfect view to fill the gaps, provide needed linkage, and increase communication?

The steering committee for the Forum, coordinated by Paul Turner and Chloe Wacenske, Cooperative Extension Agents, continued on to the task of this plan development. A first "building block" is offered to the Genesee/Finger Lakes regional community for reaction, further development, refinement and above all, IMPLEMENTATION.

The Environmental Education Steering Committee:

David R. Babcock, Monroe County BOCES II
William Banaszewski, Community College of the Finger Lakes
Olga Berg, League of Women Voters
Graham L. Cox, Monroe County Environmental Management Council

Jerry F. Durand, Greece Central Schools
Don B. Martin, Monroe County Planning Council
James I. McGuidwin, Monroe Community College
Ron Schroder, NYS Department of Environmental Conservation
Elizabeth Thorndike, Girl Scouts of Genesee Valley
Paul Turner, Monroe County Cooperative Extension
Chloe Wacenske, Monroe County Cooperative Extension

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GENESEE-FINGER LAKES REGIONAL FORUM
ON THE STATUS OF ENVIRONMENTAL EDUCATION

January 23, 1981

Monroe Community College, Rochester

Sponsor: Temporary State Commission on Youth Education in Environmental Conservation, Senator Bernard C. Smith, Chairman

7:45 p.m. Welcomes: Ruth Mandell, Acting Vice President, MCC
Senator Bernard C. Smith

William Bailey, Program Manager WXXI-TV, Presiding

7:45 p.m. An Environmentally Enlightened Citizenry? Keynote address, Dr. John A. Gustafson, Commission Vice-Chairman

8:15 p.m. What is the Status of Environmental Education? Response:

| Education | Conservation |
|---|---|
| David R. Babcock, BOCES II, Elementary Science Coordinator | Robert F. Perry, Regional Director, DEC, Avon. |
| Dr. Clarence W. Gehris SUNY College at Brockport | John T. Hoff, County Legislator Town of Greece |
| **Citizen Interest Groups** | **Business** |
| Ms. Byrna Weir, Chairman, Education Committee, RCSI | Donald Barry, Industrial Management Council |
| **Labor** | **Local Government** |
| Claude Granes, Rochester, AFL-CIO Bricklayers | Mrs. Irene Gossin, Supervisor Town of Penfield |

8:45 p.m. Small-group discussion of current regional activity

9:45 p.m. Reports from discussion groups

5:30-7:00 p.m. Continuous films--exhibits--socializing
Buffet dinner served 5:30 to 6:30 p.m.

7:00 p.m. Group reports, continued

8:00 p.m. Is regional coordination a need? Dr. John A. Gustafson

8:15 p.m. Open forum on opportunities, needs, required resources.

9:00 p.m. Adjourn.

The Commission gratefully acknowledges leadership in local assistance provided by James I. McGuidwin, Associate Director, Continuing Education, MCC, and Extension Agents Mrs. Chloe M. Wasenske and Paul E. Turner, Monroe Cooperative Extension.

THUMBNAIL SKETCH OF REGION

## The Genesee/Finger Lakes Region: Natural Resources and Human Population

The Genesee/Finger Lakes Region extends 50 miles south with 90 miles of Lake Ontario shoreline each side of the central city, Rochester. Land and water, cities, villages and people combine in a collage of natural beauty.

Eight counties (Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne and Yates) are members of the Genesee/Finger Lakes Region.

The picturesque and varied topography attracts many residents and about two million vacationers to the region each year, adding some $100 million to the Region's economy annually.

### Topography

The Region of about 3,546 square miles has two major landforms north of the dissected Allegany Plateau which beautify the Finger Lakes head waters. Three east-west escarpments, Niagara, Onondaga and Portage, plus a complex glaciated topography, are geologic features.

Elevations on the lake plain are between 260 and 700 feet; on the uplands between 500 and 2,500 feet. The Region has two major drainage systems: The Genesee River and the Oswego River, draining most of the Finger Lakes. Small creeks drain directly into Lake Ontario on the lakeshore plain and portions of Genesee County behind the Onondaga escarpment drain west to Lake Erie by way of Tonawanda Creek.

The 90 miles of Lake Ontario shoreline of Orleans, Monroe and Wayne Counties, is made up of a variety of interesting features of geological, ecological and aesthetic value. The shoreline is a mixture of bays,

ponds, marshes, beaches, rocky headlands and bluffs.

The flatlands of the river and creek flood plains and swamps of the Region produce some drainage and flooding problems for agriculture and to developers. The steep slopes of the Finger Lakes valleys and the glacial drumlin belt of Wayne and Monroe Counties especially must be treated with care by farmers and developers alike to avoid erosion.

## Weather

Climatic features for the area are derived largely from the procession of high and low pressure flows from the Mississippi Valley and Great Lakes down the St. Lawrence Valley.

The fruit belt along Lake Ontario and the vineyards of the Finger Lakes owe their existence to the moderating influence of water bodies. Late falls extend the growing season and spring is delay to prevent frost damage to budding vegetation.

## Soil Resources

Soils of the Region have developed from glacial action and feature drumlins, moraine, outwash material, alluvial or lake-laid deposits.

The Regional Planning Board has completed a report which describes general soil types and their distribution. Town and County planning reports, plus various soil surveys describe suitability for such various uses as agricultural, residential development, commercial development and septic tanks.

## Changing Land Use

The bulk of the Region's population lives in Rochester and the suburban towns of Monroe County. Growth centers, major highways and strip frontage, however, extend out over much of the region. Farmlands are giving way to housing tracts; planned unit developments and two new

towns, Riverton in Monroe County and Gananda in Wayne County; and once deserted lake shores are dotted with more and more summer cottages and year-round homes. Their owners are now commuting 20 miles, 30 miles and more to work each day into the industrial and service centers.

## Recreation

Demands for homebuilding for recreation sites are putting heavy demands on the Region's lakes, rivers and wetlands.

The Finger Lakes and Briston Hills are the focus for these demands, offering a place to "get away from it all."

The Lake Ontario shoreline with several bathing beaches is second in demand for home and recreational sites. The bays and river mouths provide excellent areas for summer water sports. Hunting and fishing resources provide enjoyment to many people.

Along the Barge Canal, which traverses the Region east-west with connection to the Finger Lakes, there are more than 100 small boat marinas. Pleasure boating has increased fourfold in the last 15 years on the canal with attendant pressures on all the lakes.

## Renewable Resources

Valuable wetland areas also exist in the Region, particularly in the bays and ponds of the Lake Ontario shoreline, Oak Orchard, Bergen, and Montezuma swamps and in the Finger Lakes valleys. These are refuges for waterfowl and wildlife and spawning grounds for fish and insects. Thus they are valuable as "natural" botanical and ecological laboratories supplying "renewable resources."

## THUMBNAIL SKETCH OF POPULATION

The flourishing Rochester urban area, centering on the city of Rochester, with its thriving photographic equipment, instruments and other durable goods and apparel industries, faces the kinds of problems associated with rapidly expanding areas. The area has attracted considerable in-migration in recent years, including a significant percentage of Negroes and some Puerto Ricans. Its economy has been strong enough to absorb much of this inflow and still show a very low rate of unemployment; but in the process some typical central city-surburban problems have emerged. Despite the less than proportionate size of its nonmanufacturing sector, the area's industries are well diversified and have a bright future. In the photographic equipment industry the area has an unrivaled concentration of well-known firms and an industrial complex unlikely to lose its momentum for growth.

The great growth of local industry on a highly technical level has stimulated a corresponding rise in the medium family income to $11,600 in 1970, or 82.2 per cent greater than the 1960 census figures indicate. Over 500,000 additional residents, or a population increase of 50 per cent to 1.6 million people, is projected for 1990. At present there are 60,500 blacks and 7,500 Puerto Ricans in the region, concentrated in the city of Rochester. By 1990, trend projections indicate a 21 per cent nonwhite population as compared with 17.6 in 1970.

About 10 per cent of the region's population is over 65 years of age. The next 20 years will see the 25-34 age group increase 82.4 per cent and the 35-44 group increase 77.9 per cent.

How best to provide for the physical, social and economic needs of this expanding population is the major task facing the eight-county region. Many of the development problems caused by this expansion--insufficient housing, improper solid waste disposal, inadequate transportation systems, wasteful use of the

nation's natural resources--ignore political boundaries and cannot be solved by single jurisdictions. The Regional Planning Board channels actions on many aspects of these problems. Environmental education also must reckon with the cultural mix and problems of the population on a regional basis.

## REGIONAL FORUM AND ITS IMPACT

"Become the first 'ecophiliac' (earth-lover) on your block," Dr. John A. Gustafson urged the 178 community leaders and educators who attended the Genesee-Finger Lakes Regional Forum on Environmental Education on January 25, 1973.

"We must be eco-sensitive, not simply environmentally aware. We must be committed to action, not merely informed and concerned," the keynoter added.

The vast majority of the 178 participants already were eco-sensitive ecophiliacs. That was evident from their reports of school and community environmental projects, from their frustrations with obstacles that stymie program expansion and from their pleas for resources to fully develop comprehensive environmental education programs to enlighten the 1.2 million citizens of the eight-county region.

The Forum, one of six convened around the state by the New York State Temporary Commission on Youth Education in Environmental Conservation, was held at Monroe Community College, Rochester, N.Y. Several Commission members and staff attended, including Senator Bernard C. Smith, Commission Chairman and Dr. Gustafson, Vice-Chairman and forum key-noter.

The focus of the Forum was the three-year-old Commission's broad goal:

"To bring into being in New York State an environmentally enlightened citizenry through the development of a comprehensive environmental education program which will bring about an awareness and understanding of, and commitment to, a value system and life style which will result in the maintenance and improvement of the quality of our environment."

Announcement of the Commission's proposed statewide and regional centers with coordinating and clearinghouse functions received generally enthusiastic audience response. Some question was expressed toward the Commission suggestion that local conservation commissions might assume a policy-developing function on the local level. The audience favored, instead, a flexible provision for the "local voice." The Commission's proposed statewide plan was last on the Forum Agenda. Time did not permit a comprehensive study of the proposal and in-depth audience reaction to it.

With representatives from more than 100 different organizations at the meeting, idea exchange was energetic and exciting. "I didn't know about that..." was the most frequently overheard comment of the day. Buzz groups approached the education gaps from four angles: citizen action groups, business and labor, conservation and government, and education at all levels (elementary, secondary, college, continuing education, youth groups). All agreed that communication should not end with the meeting. More forums on a regular basis, communication mechanisms among groups and coordinated planning were repeatedly suggested. And before the day was over, plans for future cooperation were taking shape. College representatives discussed a consortium idea. County newsletter editors agreed to "go regional," in response to the recurring reminder not to forget the other counties.

## Forum Attendance

178 total; 52 women, 126 men. Total exceeded preregistration by more than 30. Crisp, clear weather prevailed.

Audience peaked soon after 2:15 p.m. opening. About 140 were served at dinner and almost this number remained through evening. Few students were present.

## Regional Representation

166 persons, 95 percent of all present, lived and/or worked in the eight-county region. This total considerably larger than anticipated. County breakdown:

| | | | |
|---|---|---|---|
| Monroe | 124 (75% of 166) | Seneca | 5 |
| Livingston | 12 | Wayne | 5 |
| Ontario | 10 | Yates | 3 |
| Genesee | 6 | Orleans | 1 |

## Representation From Outside Region

| | |
|---|---|
| Erie | 3 |
| Steuben | 2 |
| Onondaga | 1 |
| Unknown | 1 |

## Commission Members Present

| | |
|---|---|
| Senator Bernard C. Smith | John L. Stookey |
| Dr. John A. Gustafson | Harlan B. Brumsted |
| Victor A. Fitchlee | |

## STATUS OF ENVIRONMENTAL EDUCATION IN THE REGION

At the Forum, five spokesmen summarized on-going regional interest and activity in environmental education. Each one represented a different segment of society with a vested interest in achieving a quality environment. Spokesmen's observations and comments, as well as those from the forum discussion groups, are included below:

### Education Status

Education - David R. Babcock, Elementary Science Coordinator in Gates, BOCES II

Measuring their accomplishments against their desired standard for comprehensive, lifelong, eco-sensitive environmental education, even the best educators in the region are frustrated. And good teachers are aware that "their kind" are still "few and far between." Some schools have not yet begun to do anything about environmental education.

The "good things" that teachers reported at the forum were overshadowed by their constant awareness of obstacles (funds, facilities, administrative commitment, time, training) to environmental education progress.

Certainly progress has been made. Status reports for environmental education in Seneca and Monroe County schools are now available. Overall, teaching is child-centered and "lively"; not textbook-based. A new urban living course offered in city high schools is centered around environmental concerns.

At the Science Center for Instructional Materials and Processing (SCIMAP) materials for two programs, Elementary Science Study (ESS) and Science Curriculum Improvement Study (SCIS), are manufactured and distributed to 5000 children in the Gates-Chili and Wheatland-Chili Central School Districts. SCIMAP is located in the Ballantyne School, 10 Ballantyne Road.

Some area school districts that use similar elementary science programs are Greece, Rush-Henrietta and Canandaigua. Other school districts may still be using only textbooks as an elementary science program, or are in the process of investigating these newer programs.

But the really "shining examples" are still limited. One of the most exciting high school courses reported at the Forum was a Penfield course where students work with the town conservation board. Fifth and sixth graders from another school spend a week camping and learning at an outdoor center. Some summer programs have teamed students with teachers to investigate and study the environment together.

Those same school surveys revealed disinterest or waning interest on the part of some administrators and teachers. The Earth Day spark must be re-kindled. Often expressed was the suggestion that teacher trainees be required to take environmental education courses along with value clarification social sciences.

Students themselves, inspired by and involved in other youth education programs--Scouts, 4-H, Cooperative Extension, Rochester Museum programs, school ecology clubs--have carried their interest into the classroom, bringing multi-discipline ecology insights into all their courses. "After school," they have organized school and community recycling projects and organized county-wide "walks" for the environment.

Independence of school districts creates a fragmented awareness of what is happening and what is available. Directory lists (prepared by volunteer groups) are obviously insufficient coordination. Some of the Forum attendees were unaware of the Fancher Campus facility of SUNY-Brockport. Others had not heard of the environmental education programs for 23,000 Girl Scouts in the region. Or, of the environmental "packets" and library study "carrels" available from Cooperative Extension (Monroe and Orleans Counties). Complete, multi-discipline, lifelong environmental education can't or won't happen without strong regional leadership and comprehensive planning.

Representatives from ten colleges and universities in the region reported a wide range of present courses and future proposals. The Community College of the Finger Lakes offers a two-year environmental conservation and outdoor recreation major. The University of Rochester will conduct a Scandinavian environmental protection tour this summer. Rochester Institute of Technology offers several courses, but one was described where students really "got into" value change and commitment.

All colleges voiced their desire and need for a consortium to plan together. The Community Resource Development program staff of Cooperative Extension could be the convenor-catalyst to initiate such a consortium.

Citizen Interest Groups - Byrna Weir, Chairman, Environmental Education Committee, Rochester Committee for Scientific Information

Devotees of "grassroots" endeavors sometimes feel they lack power. Not so with volunteer environmental groups!

A historical look at regional progress in the popular ecology movement reveals that credit for these successes, in most cases, should go to citizen interest groups.

Since Earth Day on April 22, 1970, such groups have given visibility and viability to many environmental projects. For example, 42 recycling centers emanated from the first county-wide glass drive led by the fledgling Monroe County Consumer Council in September, 1970. Environmental actions of local government are in direct response to attention and pressure from citizen groups. The annual volunteer effort, "Walk for Water," largely funds Delta Labs, a non-profit environmental monitoring and testing laboratory.

Somewhat more surprising is the fact that the impetus, inspiration and "in-service" training for most in-school environmental education has also come from these groups as well. School surveys of environmental education in Seneca and Monroe Counties were conducted by citizen interest groups not by school administration or the state education department. These same groups provide resource personnel and materials to schools for both students and teacher workshops, as well as for school recycling and composting projects. Ecology Share-Ins, similar to ecology fairs, have provided community-wide happenings in Monroe and Livingston Counties. Examples of published materials provided are a directory of environmental groups, a do-it-yourself handbook, and a collection of lesson plans and curriculum guides.

Represented at the Forum were 27 citizen groups that had not existed on Earth Day 1970, such as the Batavia Housewives to End Pollution, the Seneca County Citizen's Committee on the Environment, and Teens for Environmental Action (one of two county-wide youth groups).

Another 25 groups at the Forum existed on Earth Day (e.g., Federated Garden Clubs, Camp Fire Girls), but have since changed or expanded their functions to include greater environmental focus.

During their "buzz session," these groups recognized and critized their overlap of purposes and projects and their isolated, localized operations. These limitations, they agreed, could be corrected by increased communications (more forums, expanded regional information in Enviro News and EpiLogue newsletters) and other forms of leadership coordination.

Business-Labor- Donald Barry, Industrial Management Council

To evaluate the present status of business involvement in environmental education requires some concept of what "ought to be" the role of business. Forum

participants offered mixed opinions of this desired role. "Just stop polluting" would be more than enough to satisfy many participants. Many local businesses and industries have invested hugh sums of money to reduce pollution from their own manufacturing processes. Others wanted: financial backing for environmentally-aware political candidates; active lobbying for environmental research and legislation; scholarships and incentive awards to recognize youth achievements in environmental projects.

The low credibility that industry has among many environmentalists in the region is somewhat unjustified, some Forum members conceded. They complimented the type of anti-pollution advertising, (e.g., Eastman Kodak) which honestly explains, in a "non-puffery" style, efforts and costs to clean up the environment. On the other hand, exaggerated examples of advertising were cited as "advertising pollution." Factual advertising has served as an educational vehicle to the public and to other businesses, as in the case of the Rochester Gas and Electric Corporation.

Business efforts to communicate not only with customers but with employees were also commended. Industrial house organs could provide greater coverage of community environment projects, especially recognizing and encouraging employee participation in such activities.

The cliche, "if you can't beat 'em, join 'em," is exemplified by business representation in local environmental organizations. Research data, technical know-how, financial backing, audio-visual materials and expertise have contributed to the success of local environmental projects. For example, Rochester Committee for Scientific Investigation has received financing from the business community. Greater inputs were urged, such as more research (both pure and applied), internal recycling programs, free litterbug promotions, and plant tours with an environmental and anti-pollution focus.

Government - Irene Gossin, Supervisor, Town of Penfield

Environmental education leads to action. And that action should be aimed at influencing local government, according to "eco-politicians" who participated in the Forum. Environmentally concerned citizens must also remember that local school boards are a branch of local government, reminds Senator Bernard Smith. Citizens must learn to enlighten and influence board members to give the needed impetus and priority to environmental education.

Eco-sensitive voters won at least four victories during the 1971 local elections. The environmental activities in many localities reflect increased citizen sensitivity to ecology-related issues. One local government has passed an entire environmental package of eco-ordinances; flood plains, steep slopes, wetlands, conservation areas, billboards, solid wastes, transportation planning, salt on roads and many other facets are encompassed by these regulations. Developers in this particular town must meet certain criteria before they are placed on a planning board agenda. Environmental impact statements must be included with the developer's plans. One responsibility of the town conservation board, the first in the state, is to review and give recommendations regarding development of open space.

In Livingston County a population stabilization policy was adopted.

A team-work approach between the local high school and the town conservation groups provides student insight and experience into the workings of government. A direct spin-off has been increased parent-voter awareness of local issues.

Conservation - Robert F. Perry, Regional Director, DEC, Avon, N.Y.

The earliest voices to forewarn the public about destruction of our natural resources were the conservationists. Their educational efforts continue with

an expanded focus on the total environment. The state's Department of Environmental Conservation regional office in Avon, New York, provides a variety of programs for youth and adults.

According to their philosophy, even the enforcement of environmental laws is a form of education. Their educational programs of a more traditional nature include the state-published Conservationist magazine (on recycled paper), reprints and pamphlets for schools and groups, speakers for classes and clubs, news releases, and one-to-one resource management consultations with property owners.

Many schools in the region have participated in conservation field days organized by the Department. A county-wide field day for teacher training was a successful experience the Department wishes to promote on a wider scale. A long-anticipated outdoor center under the Department's auspices has not received state funding, although plans have been approved for several years.

The DEC Region 8 office has a community relations specialist to help establish county, town and local conservation councils. There are seven counties and around thirty-five towns with functional organizations. Overall, the region needs more such boards with competent, active, concerned members.

Urban 'ecophiliacs' at the Forum urged DEC to give greater attention to the man-made environment, especially to the educational needs of urban students who are geographically and/or economically inaccessible to the regional office and to the proposed outdoor center.

Conservation groups (with a small "c" --- sportsmen's clubs, etc.) were urged to team up with other volunteer ecology organizations.

## IDENTIFIED MAJOR REGIONAL NEEDS/GOALS

"But he who looks into the perfect law, the law of liberty, and perseveres, being no hearer that forgets but a doer that acts, he shall be blessed in his doing."

James I:25

In the extensive discussions of the needs and goals of a proposed regional plan for environmental education, one concept pervaded all else: The goal of encouraging a stewardship responsibility toward natural resources. Inherent in this stewardship is the development of values and attitudes which would effect a necessary change in lifestyles. As one Forum participant expressed the idea, "People must be taught to examine their lifestyles. This is the real question in environmental education, not a multitude of field trips in identifying things. Once a kid has values, field trips can have immeasurable environmental effect. But we have to get through to them on how a person determines what is of value to him, and we haven't done that."

Mass public education was seen by those in attendance at the Forum as the major avenue to societal change in attitudes toward the environment. Every effort must be made to reach people at all levels from mursery to adulthood, and better formal programs in the public schools were considered an important way to reach both children and their parents. The church also has an opportunity to reach all ages and socio-economic levels in developing attitudes toward the environment.

### Multi-Discipline Curricula

Within the perimeters of formal education, it generally was agreed that there is a need for multi-discipline curricula development. If a major goal of environmental education is a change in the attitudes and lifestyles, then efforts must be made to show that environmental problems encompass every facet of life and to see that they are not simply relegated to science

class. One Irondequoit High School student representative reported that in his school environmental concerns currently occupy only a few days in science classes, but there is little attempt to extend this limited coverage to other classes. "Environment concerns every single class," he noted, "Social Studies, Science, Health and English."

The crux of the program should be eco-sensitivity education involving behavior change, a value system, not just environmental "content." This approach calls for a flexible curriculum which would pervade all subject areas. Modern participatory techniques in science education should extend to the environmental areas. Typically, if a science class goes on an ecology-oriented field trip, this experience should provide fodder for discussion in social studies as well as possible writing experiences and oral reports in English.

The multi-discipline approach in the schools should include urban and rural ecology as well as the contemporary problems of society. The newer concepts of energy conservation were emphasized as a theme to be incorporated in all areas of education.

The multi-disciplinary focus should be on life-long education. The resources of such institutions as Cooperative Extension Associations and community colleges should be implemented to reach people in continuing education programs.

One forum participant raised the point that students at all levels should be encouraged to become interested in multiple types of training and disciplines. "We need lawyers and engineers who are good biologists," he observed. "We need men of dual or multiple training, and I would hope, especially at the graduate level, that colleges would move into this area." On a practical level, perhaps some special courses could be developed in continuing education on environmental problems of special interest to the town planner, the engineer, the lawyer, the industrialist.

The need for interdisciplinary planning and curricula development in general relates not only to formal programs in public schools and beyond in the life cycle, but also to out-of-school, extra-curricular activities for youth groups, citizen groups, conservation boards, school boards and others. The notion that only teachers can teach should be dispelled and knowledgeable community resource personnel should be tapped for presentations in and out of the formal classroom.

If there was general agreement about the need for more curriculum development to improve school programs, there was less unanimity about its implementation. Many Forum attendants favored mandated courses and curricula, while others feared that these would lead merely to token efforts. Senator Smith cited the mandate for drug programs that was ignored for many years and noted the difficult fiscal problems faced by the state's schools. Dr. Gustafson stated that he preferred to see programs and curricula development emanating from the grass roots through real commitment and voluntary action.

Senator Smith reported that Commissioner Nyquist of the State Education Department had sent directives to all school districts in effect urging efforts to bolster curriculum development on a multi-disciplinary level in connection with environmental education. Chancellor Boyer of the State University of New York, in addition, has asked that everyone in the state university system report back on the stage this development has reached in his institution. It is now the job of each school and college to follow this lead and utilize existing resources to develop curricula along interdisciplinary lines.

## Teacher Training

A prime concern voiced at the Forum in connection with formal education was that teachers should be trained to effect the desired changes of attitude toward the environment.

"Environmental education requires broader prerequisite knowledge than any other science," noted one Forum speaker. College-level required courses, or competence, of all elementary and secondary teachers would be one way to upgrade teacher training. It would then put the onus of responsibility upon colleges to develop substantive courses for future teachers. This step in the direction of specific training of teachers should result in better formal programs in the schools, if teachers implement their newly acquired knowledge. Social Science courses on value clarification related to quality environment should also be taught at the college level. Knowledge of behavior and attitudes lays the foundation for effective education on ecology.

Teachers at the Forum most often expressed the need for good inservice training for elementary and secondary teachers, to develop interest in the subject and to enlighten the uninformed or apathetic. Many teachers reported the need for practical workshops but also stated that realistically, even these would not reach many teachers unless incentives to participate were given in terms of credits or scholarships. Another suggestion was to give professional recognition to teachers who would publish their field studies in a science information bulletin or in existing newsletters.

There was an expressed need for released time for teachers to study and to lead extensive class projects. Teachers, like students, learn by doing, and spending time with students doing things, all the while stressing the nature of the environment as a whole ecosystem, can pay important dividends in teacher and student awareness.

Some Forum participants suggested that if environmental questions were added to the scholastic achievement tests, more teachers would give priority to teaching in that field.

In-service training also was mentioned as a pressing need for continuing educators who work with youth groups and adults. The business and labor discussion

group report included a suggestion that businesses sponsor leadership positions in Boy Scouts and Girl Scouts. These positions would be filled by environmental specialists who would teach leaders and members in those large organizations. The idea of the value of informal education, as well as the public school variety, frequently was expressed at the forum.

## Communication Systems

Underscoring the need to develop an effective educational program in all its facets is the necessity for more coordination and more information dissemination. (Coordination gains acceptance if it is defined as among peers or among groups of equal rank.) Good communication is seen as an essential catalyst for the exchange of ideas among groups and for developing an awareness and attendant changes of attitude toward the environment. Many Forum participants especially voiced the importance of communications in stepped-up efforts to influence local government, "as this is where the power is," for significant change.

There is a need for a well-developed communication system on three levels: intercommunications among groups and institutions concerned with environmental education; intra-communications within segments, such as ecology groups and colleges, and finally, a mass media system to reach the public at large.

Part of the focus for more inter-communications among groups to coordinate efforts and to enable people to profit from the experiences of others, centered on Enviro News, the newsletter published by the Monroe County Environmental Management Council. A minimum commitment to improve this facet of the communications system would require that this publication be expanded in coverage and scope to include activities of groups within the entire Genesee/Finger Lakes eight-county region. If this newletter were to be extended to its maximum potential, it could be a vehicle not only for news of this region, but it could also dispense "how-to-do-it" information aimed at up-grading environmental education programs throughout the region.

Improved intra-communications would provide links between schools, citizen groups, businesses, colleges, ecology groups--organizations which have similar tasks and functions. Here, too, newsletters could provide minimum communication to member groups, while a more ambitious program could include a regional board or council to which each group would send a representative to share ideas and to plan workshops and conferences for the entire membership. One outgrowth of the Forum was a possible college consortium on environmental education, which would rise from the recently formed Rochester Area Colleges, Inc., an organization of 16 colleges in the Genesee/Finger Lakes region. Another was a follow-up workshop for those in the citizen groups section at the Forum.

The third facet of an effective system of communications would be a mass media system for the public. Forum participants stressed the need to build public awareness and stimulation for action and commitment. Publicity on activities in progress by agencies and business was seen as an important component of this goal. One attendee at the Forum noted "the need to glamdurize our goals and, at the same time, to reduce them to simple language so that the information can be readily accepted and understood by the man in the street." Someone else also noted the need to translate environmental issues into dollar and cents terms: "If we can relate a program to what it's worth or what it really means to the individual in dollars and cents, or what the lack of a program is costing, this has impact."

Audio-visual aids and television were discussed as important vehicles for reaching the public. As a minimum effort, there should be a "what's happening" calendar of events and projects in the regional press and the use of educational TV for spot coverage, documentaries and discussions. An "Earth Keeping" series will be featured on public television this Spring. Optimal goals might include regular programming on commercial channels and radio, news columns and a well-developed advertising program.

In relation to advertising and promotional efforts, a suggestion was made to utilize cartoons and small segments of television time for impact. This approach was seen as at least as important as full-hour specials with forums and discussions about environmental problems. Another Forum member noted that improved education in the schools can result in geometric progression because children are good promoters. They are eager to tell parents and peers what they have learned.

## Potpourri of Information

Requests from those at the Forum for more information resulted in a potpourri of information that needs to be shared. A regional center would expedite the development of a system to disseminate a wide variety of lists including:

1. A regional survey of resources for teachers by subject, age level and problem
2. County-by-county organization lists with names, addresses and goal opportunities for citizen input
3. A list of agencies, services, personnel, audio/visual equipment, speakers bureau, sources of funding for research or educational programs and free materials
4. Educational courses in-state and nationally
5. Federal and state program information
6. An "organization tree" showing DEC, Parks and Recreation, etc.
7. Ideas, methods, how to get publicity and disseminate information
8. Environmental facts and research, with local data

9. Problem-centered lists, with available aid, approaches and experts

10. Information on attitude, behavior change, and value clarification.

11. Training material for youth--out-of-school groups

12. Consolidate lists of EMC and RCSI

13. Legislative alerts about proposed bills, evaluations, and needed legislation.

If available, this information then could be utilized by all three facets in the communication system -- inter-and intra-groups and by the general public.

Local autonomy for channeling portions of any potential funding to a regional center holds preference over central staff development at Albany.

## Outdoor Learning Centers

Another expressed need for environmental education in the Genesee/Finger Lakes Region was for outdoor learning centers. Although these are not the total answer to educational programs and goals, representatives at the Forum felt that such centers can do much to augment classroom study by providing the focus for field trips and by encouraging an involvement with the environment on the level of meaningful experiences. Another point made was that outdoor learning centers, available to both children and adults, provide opportunities for people to work at the grassroots level with youngsters.

It was suggested that, the use of present facilities should be expanded on a regional basis and that more publicity is needed on existing centers. These include the Bergen and Montezuma swamps, the Fancher Campus Center of SUNY at Brockport and both local and

state parks. Future plans include Bristol Springs Nature Center of the Rochester Museum and Science Center and DEC's Oak Orchard Outdoor Education Center in Genesee County. One member of the Greece Conservation Commission observed, "One reason we don't educate our children as we might is that we don't use the resources we already have." She cited the numerous resources in the Greece area alone and suggested that nature trails be planned near ponds and other natural resources so they will be more easily accessible to children, families, Scouts and other groups.

To encourage further the awareness of close availability of outdoor learning centers, someone suggested that "what we need is some environmental impact displays to show people what they have in front of them."

Planning and centers both need to be where the people are. One Forum participant lamented the fact that the Department of Environmental Conservation is in Avon and that "the whole orientation of that organization is toward the wilderness area and not toward the part of the environment where people are." Many people at the Forum expressed the need for learning centers to be urban-oriented, as half of the population in the state is in New York City, and of the other half, at least half of these people live in Syracuse, Rochester and Buffalo.

Dr. George Berg observed that the falls of the Genesee River in Rochester is within four minutes walking distance of every inner city school. More classes should be using this wilderness walk right along the cliff and in the gorge as a natural resource for learning.

The point was made that in the cities some man-made centers of learning can provide important educational experiences. Dr. Gustafson told of his discovery of effective store-front nature centers in the ghettos of Washington D.C. One, the Adams-Morgan Community Nature Center, was started when a youngster brought a turtle and snake to a woman community leader. Now children come there from schools and draw pictures of the sizable menagerie. This center could provide the

model for similar ones in Rochester and other areas in the region.

The Forum discussion groups urged cooperative planning for funding and use of new outdoor learning centers, so that these facilities and resources can be used by youth, teachers, business leaders, lawyers and housewives for many purposes. It was suggested that the Audubon workshop in Greenwich, Connecticut, which offers three and four-day learning experiences for interested groups, might be a good model for similar centers and programs in the Genesee/Finger Lakes region. Highland Park could be expanded to include part of the county's open "Pen land" acreage across from the famous lilac collection. Plant collections, a structured learning center and nature walks could then highlight future use of this prime piece of open space.

Throughout the discussion of outdoor learning centers there was a plea for accessibility to the population, both in terms of location and pocketbook.

## Research

The place of research in the scheme of needs for an environmental education plan will serve to provide the basis for making decisions about "trade-offs" for alternative courses of action. If the goals of an educational program are an understanding of the environment and a commitment to change attitudes and behavior in order to preserve natural resources, then authoritative information is needed to aid decision making.

Considerable research has centered on local environment, but more is needed. Existing research needs to be interpreted as to its implications for the Genesee/Finger Lakes region. The Environmental Protection Agency's regional laboratory at the University of Rochester needs greater public exposure. Teachers and environmentalists should be encouraged to do more local environmental research, which could be published and disseminated throughout the region. Perhaps scholarships and/or fellowships could be awarded for these purposes.

A report from the business sector at the Forum included a suggestion that business should lobby for public funds for pure research; it should support research relative to conservation as well as that relating to the properties of industrial products. A turn-about philosophy, having industry prove the environmental safety of its product, is a better goal than having the government test a product to determine the safety factors.

Research in the field of behavioral change is needed, said some Forum participants, as well as environmental research. "We all agree that we need a big change in values and attitudes of people," noted one anthropologist present. He said that charting the course of evolution of a society's change in value systems could help us engineer these changes.

## Funding

The problem of funds to implement educational programs is obviously not exclusive of other needs and goals. The attitude toward funding varied at the Forum with many people voicing the opinion that money is not the answer to developing an effective program. The answer, according to them, is to engender grassroots enthusiasm among people to work together so that things can get done on the local scene.

The fiscal crisis in many school districts is seen as an obstacle to effective programs. Particularly in the Rochester city school district, funds for in-service training, even on existing programs and curricula, is very scarce. Further cutbacks in budgets, due to loss of federal and state aid to education, would adversely affect field trips, the acquisition of new equipment and other necessary materials for new curricula. Also, we must reckon with the fact that new formal course programs in the schools necessitate an expanded teaching staff in many cases. Since teachers' salaries comprise a large portion of budgets, there is a disinclination to incorporate new, un-mandated programs which would mean staff additions.

There is a multiplicity of needs both in and out of schools for funding for coordination and for bringing expertise to the educational situation. Some of these most frequently mentioned are the following: professional environmental education specialist for Scouts and other youth groups; school district environmental education coordinator; technical assistance to develop nature trails and displays; materials, audio-visual equipment and other teaching aids. Funding channels for these various proposals should follow revenue sharing trends with emphasis on responsive, responsible local control rather than extensive central staffing in Albany.

## Reactions to the Proposed State Plan

Evaluation sheets from Forum participants on the state proposal tallied 30 for the plan and five against it. Those who approved noted that the best coordination is likely to come from comprehensive regional planning. They believe that a strong leadership system is needed with accomplishment power and with the flexibility to decide what local organization in each community is the most appropriate one to coordinate local programs. One of the most important functions of the centers would be to survey resources. There was strong approval for regional, not state, clearing houses which would join with other regions in a coalition of agencies. These regional agencies would provide staff and pay dues to carry out coalition objectives.

Some participants, while generally approving the regional agency plan, envisioned problems which might arise with the present system of school district independence. Schools traditionally are not regionalized in thinking as agencies are. Another possible problem seen was that of reaching urban children, since this important task might be difficult on a regional basis.

Comments against the regional plan were characterized by the philosophy that this might be just another layer in the empire building bureauocracy to provide more government jobs. This group believes that local

government needs power to enact and enforce laws related to conservation. Planning and executing programs for environmental education, they say, should be retained by the local sector.

Much discussion at the Forum focused on the structure and function of proposed clearing houses. Some believed the clearing houses should operate as places where groups and individuals could write for information; others felt that without an outreach function, their resources would not be used optimally.

One spokesman observed that the Rochester Museum tried operating a clearing house which did not get full support. A 24-hour telephone answering service for the clearing house received from 3 to 30 calls per week and staffing the desk with volunteers was difficult, then impossible.

## CONCLUSION

If conclusions can be drawn about the multiplicity of needs in planning an environmental education program for the region, they would be that some kind of coordination of efforts is needed and more careful planning is needed to insure total community involvement in the educational process. The foregoing assessment of needs is a general appraisal of what should happen in the future, not a how-to-do-it manual. Our fervent hope is that Phase Two, the implementation of needs, is less than a year away.

NEW YORK FORUM ON

FUNDING FOR ENVIRONMENTAL EDUCATION

February 23, 1973

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INTRODUCTION

The primary purpose of the New York City Forum was to estimate the magnitude of funding and other resources available for environmental education at both the state and national level. The Commission realized that funding might be obtained from federal sources, from state agencies and from private foundations, but that the situation was highly fluid and not well documented or understood. In making its assessment of the funding and other support available at all levels, the Commission also examined the characteristics of programs receiving support, the way in which applications were evaluated and ways that the public was informed about availability of funds.

A supplementary purpose of the investigation was to generate dialogue among those organizations and individuals which require outside support for efficient operation of their environmental education programs. It was hoped that such an exchange of ideas might uncover new sources of support and encourage cooperation, coordination and other non-tangible prerequisites to successful program development and implementation.

The public forum was also designed to produce a dialogue between those who determine goals for environmental education by delegating funds and those who must design programs which meet funders' goals. Through this dialogue the Commission felt that each group could obtain a better understanding of the expectations of the other.

Prior to the forum officials of private foundations, educational institutions and state and federal government were asked questions on the role of their group in environmental education; their evaluation techniques; their interpretation of "environmental education"; and recommendations that they had for people who wanted to apply for grants. (See Appendix for complete question list.)

Morgan Gunther of the National Brewers Association, interviewed in Washington, D. C. on February 9, 1973, told the Commission of the changing nature of his organization's concerns. The Brewers were once concerned primarily with water quality and pollution. During the past decade, however, they have become increasingly aware of the problems inherent in the packaging of their products. They were instrumental in starting the Keep America Beautiful anti-litter program and have mounted two campaigns in this area. Their first attempt was "Fight Litter", a low-key effort which caused the industry to question whether or not they had a responsibility to be concerned about the litter problem.

With the emergence of more concern on the part of the general public in all phases of environmental improvement in the past five years and attacks, legislative and otherwise, on non-returnable bottles, the approach of the brewing industry has become more visible. Their campaign, now called "Pitch-in" has been carried on national TV and magazines, with an estimated cost of $1,000,000.

Asked why other industries have used advertising rather than making direct contributions to improving the environment, Gunther explained that the brewing industry, through the Brewers Association, has a field staff throughout the country who can work with local people to get things done. Other companies, he said, often lack the staff for this kind of face to face interaction and so rely on advertising as a substitute. Some industries may not be aware of the adverse impact that their "ecology-minded" advertising campaigns sometimes have on the general public, he added.

Asked about sources of support for environmental programs which were not directed specifically at litter clean-up, Gunther mentioned the National Center for Resource Recovery which is extremely interested in recycling efforts of municipalities and which may be able to provide advice and some support for these operations.

James Aldridge of the Conservation Foundation, interviewed in Washington on February 9, 1973, mentioned that environmental education activities are one of the many environmental interests of his organization. At the time of the Commission interview, Aldrich was preparing for a forum on environmental education which would solicit the opinions of various leaders in the field. The Conservation Foundation also put together a source book entitled Environmental Education -- Academia's Response. They have done case studies of environmental education at the college level and are developing case studies at the secondary level. They would also like to develop a sourcebook for teachers. They are involved with several international programs in the environmental field as well.

The Conservation Foundation, Aldridge said, is an operating foundation. It does not have the funds to provide grant money to outside projects. He named the National Institute for Education as a possible future source for funding, but pointed out that the group is still organizing and the priority it may give to environmental education is unknown. He also said the National Science Foundation's RAND program has so far resisted funding projects which were primarily geared to environmental education. He saw that the Environmental Protection Agency might be trying to capture some of the influence in the environmental education field, a fate which he thought might occur if the Office of Environmental Education in the Department of Health, Education and Welfare were discontinued.

Lawrence Stevens, Executive Director of the Citizens Advisory Committee to the Council on Environmental Quality, was doubtful of the ability of the Office of Environmental Education to continue supporting programs in that field. He also felt that the Environmental Protection Agency might be able to move into the environmental education field. Despite a gloomy federal outlook, he was optimistic that environmental education would continue to grow.

William Claire, director of the State University of New York's Washington Office, felt that funding

for environmental education was a low priority item in both private and public funding sources. He reiterated the feelings of several other agency representatives that the National Institute for Education had potential but was not yet well organized and had not yet defined its priorities. He also felt that the National Science Foundation's RAND program was looking for programs which stressed applied research in environmental problems. Education, he said, seemed to be a low priority item with NSF.

William Colpitts of the Bureau of Sport Fisheries and Wildlife's Refuge Division, is responsible for environmental education activities on national refuges. His division is making a massive effort to provide educational experiences for the general public at many of their refuges. He hopes that programs can be expanded to reach more people in the future. In anticipation of that day, his division is keeping careful records of interpretive uses of various areas and is using the systems approach in evaluating effectiveness. He did not have sources of funds to apply outside his own operations.

William Bullard, environmental education specialist with the National Parks Service, explained to the Commission curriculum materials that the Parks Service has developed through the NEED program and the National Environmental Studies program which recognizes local areas which have adopted a holistic approach to environmental education. Bullard saw the Parks Service's role as a catalyst to local action. He spoke of the need to change the emphasis of Parks Service programs in national parks from outdoor education to the more inclusive environmental education.

Jane Westenberger, Chief of Environmental Education for the U.S. Forest Service, stressed the changing emphasis of the U.S. Forest Service in the environmental education field. Almost two and a half years ago the Forest Service wrote a new program for environmental education concentrating on understanding, problem-solving approaches to environmental education. They have used this program to re-orient the approaches used by their staff. The new mode of thinking is also

used in their publications and in their use of media. For example Ms. Westenberger is currently developing 15 half-hour segments of film which concentrate on values, rather than the facts, of environmental education.

Looking to the future, Ms. Westenberger was pessimistic about large new sources of funding opening up in the field in the near future. She indicated that the Forest Service may have to cut back on funds in this area and she saw many other sources drying up as well. She was doubtful about the efficacy of using the National Institute for Education for Environmental Education purposes. She suggested that revenue sharing should be used more for environmental education.

Joan Martin of the Bureau of Land Management (BLM) explained that the bureau is expanding its operations to include more educational use of their vast land holdings. Most of BLM land now used for educational purposes is in the western states. Oregon, in particular, has educational programs on 10 separate BLM properties in that state. Ms. Martin explained that most often BLM works with schools in developing land for nature interpretation. They are looking now for ways of expanding their operations and for ways of making environmental education one of their mandated land uses. They would also like to begin a training program for their own people in environmental education. Most of BLM, however, feels that they are not educators but resource managers. While BLM does produce some written materials about environmental education, most of the help they can provide is in the form of technical assistance to groups who want to use BLM land for educational purposes.

George Lowe of the Office of Environmental Education told the Commission that replicability of program is a paramount consideration in all grant proposals which they receive. They do not avoid funding a project just because it might also be able to get the money elsewhere. While the Office of Environmental Education recognizes that much controversy exists in the definition of "environmental education," Lowe believes that the two definitions set forth in

their 1973 guidelines -- one stressing the problem-solving approach and one the interdisciplinary nature of environmental education -- are the most nearly precise definitions yet devised. He indicated that the problem solving aspect was becoming increasingly important.

Despite the progress the Office of Environmental Education has made in the past three years, Lowe feels that their grant application review process needs improvement to insure that the best projects receive the funding. He felt that the review process used in 1972 was much too complicated. Due to this factor, Lowe himself had to review almost 1200 applications previously evaluated by a reviewing staff.

In evaluating programs which have received funding, Lowe explained the Office of Environmental Education uses both on-site visits and written interim reports. Lowe believes that the best programs are those which have the smallest percentage of federal funds. He stressed the importance of using a sliding scale as a way of reducing federal funds gradually as programs gain momentum.

In New York City, Kristin P. Bergfeld, researcher/writer for the Commission interviewed several top officials in key funding organizations. Questions were based on the standardized form used in obtaining information from federal sources in Washington, D.C. Interviewed in New York were the Rockefeller Family Fund, the Ford Foundation, Equitable Life Assurance Company, Lever Brothers, NYS Council on the Arts, Educational Facilities Laboratory and several others.

Despite their different emphases, all those interviewed saw a definite trend away from federal funding of environmental education and toward smaller amounts of funding from local agencies and organizations.

The emphasis on the problems of the urban environment was also apparent in all individuals queried. Their specific interests, however, ranged from creating meaningful nature education experiences in an urban setting to formulating innovative designs for the use

and re-use of urban spaces in ways that truly benefit urban man.

The trend is definitely away from reviewing thousands of unsolicited proposals in favor of having a funding director actively seek programs which meet the expressed goals of the donor. The extent to which this procedure can be applied depends both on the ingenuity of the funding director and the resources at his disposal for use in project selection. Directors usually rely on on-site visits, direct communication and correspondence, and interviews in selecting recipients of funds and determining the amount of funding each will get.

In line with this new philosophy, funding organizations are devoting a considerable amount of time to achieving a better definition of their goals. Many are particularly concerned that they provide assistance in areas not normally considered by trade organizations, industry, or other sources. A significant increase in internal questioning and structure has thus come about since the flurry of activity that followed Earth Day, 1970.

A favorite way of dispensing resources, which many funding directors feel will benefit the most people with the least expenditure of money, is to make grants to existing educational institutions or organizations. Often novel ideas for research projects come from within the funding agency itself and are simply fed into the educational system where researchers can expand and develop them.

The trend is also toward funding only those programs which address themselves to political action situations and issues facing the general public. Little funding is available for programs which deal with a problem area (such as community recycling) which funding sources feel should be dealt with by industries specific to the problem being attacked.

Thus there is a clearly discernible tendency to provide small incentive grants, or "seed money" to develop new programs within an existing, yet flexible structure.

The potential of a funded project to be replicated elsewhere is an important consideration of funding agencies. Federal agencies and nationally-oriented educational corporations are concerned that funded programs become national models, replicable almost anywhere through the study of written reports and guidebooks. Private foundations and industry are less concerned that this exact approach be used, but they also stress the value of funding "prototype" programs. All point to the importance of maintaining continued communication with grantees and putting them in contact with others interested in adapting the particular project for their own communities. Funding agencies also feel that it is important to maintain contact with educators, planners and other program evaluators with regard to specific programs which have been funded.

Printed reviews of projects and their impacts are still seen as the most expedient and reliable manner of relaying information about the background, rationale, and operations of funded programs. These reviews often cannot uncover the internal dynamics which separate temporary and lasting efforts, however. Continual feedback systems must supplement the written review. Mechanisms for sustaining this feedback are often still being developed.

Outside forms of evaluation and testing were not employed by any donor interviewed, yet most saw a definite need for more objective forms of evaluation. A standardized method of evaluation is needed to measure cognitive achievements, changes in attitude toward environmental issues, and the effectiveness of specific programs. These methods are also essential, if "environmental education" is to be defined with any amount of precision.

Many of those interviewed felt that environmental educators often rely too heavily on the dominant personalities of program directors in documenting program achievements. Better mechanisms need to be developed to reflect the pitfalls and problems as well as the successes of programs.

Each funding officer interviewed already used or was in the process of developing a working definition of environmental education; all agreed on the need for clarification of the term from professional educators. Without a commonly accepted definition, they saw environmental education becoming a "catch-all" for programs in need of refreshment and for unconventional new program ideas.

After exploring the funding situation with representatives of public and private funding agencies, the Commission sponsored a public forum on the subject of funding for environmental education programs at the Graduate Center of the City University of New York, 42nd Street, between Fifth and Sixth Avenues, on February 23, 1973.

Through mailings, press releases and follow-up telephone conversations, most of the environmental and educational groups and local media, as well as representatives of business, industry, labor, government agencies and professional conservationists were invited to attend the forum to learn the results of the Commission's investigation of the funding situation and to engage in dialogue with key environmentalists and with each other. To facilitate this dialogue, microphones were provided for use by the audience and the panel of specialists in environmental education. Tape recordings were made of the entire forum to insure accurate assessment of the day's activities.

A written questionnaire (See Appendix) was given to each forum participant to insure a higher degree of comparability between the responses of all participants. Drafts of proposed legislation on environmental education were also distributed for audience comment

Participants in the forum represented public and private educational institutions of all ages; media; citizens action groups; community planning boards; information centers; city service organizations and labor. Because the forum was held on a weekday morning, some invited participants whose daily concern

is environmental education were not able to attend. Their views were well-expressed by other participants, however.

While most participants had a deep commitment to environmental education and had engaged in projects in that area, they felt that present efforts were too isolated and lacked leadership and back-up support. They noted the need for more funding and publicity on their efforts. Especially important was better coordination of resources already available from many sources.

Effective, consistent coordination was seen as a necessary foundation for mass environmental awareness - an awareness which points out the difficulties in weighing the pros and cons of alternative ways of using resources. Until better coordination is achieved, participants felt that the public would remain poorly informed and only slightly aware of the depth and urgency of environmental problems and of the potentials within the state for arriving at solutions.

Even program directors who daily grapple with the challenges of making their environmental education efforts meaningful had a clear undertone of frustration and stagnation. They were burdened with keeping abreast of the flood of information relevant to their field, with insuring their financial survival, as well as with educating their public effectively and efficiently. The prevailing view of environmental education was a fragmented, under-funded, area lacking realistic goals and schedules and in need of dynamic leadership and public recognition.

Senator B. C. Smith, Commission Chairman, served as keynote speaker at the forum. He spoke of the need for total community resource coordination, planning and management if optimum environmental education was to be achieved in New York State.

The Senator underscored the need for support from business and industry. "Industry and labor are often wary of becoming involved in an environmental education

effort. This has been true in all regional meetings held by this Commission. But, why not use their advertising resources in constructive environmental educational efforts? We have got to pursue this support as part of the total community of resources."

Most participants saw New York State as a source of leadership in environmental education. They envisioned the leadership role extending into educational management, the mandating of specific courses of action, publicizing of state and local programs and objectives. The assumption of this role was seen as particularly important in light of the federal pull-back in the environmental education field.

If funding through state sources were to become available, most participants felt that it would be best utilized in support of out-of-school programs and facilities. The most crucial need, they felt, was for education aimed at the general public, especially the voting public. Small grants could promote dissemination of the many resources for environmental education already available as well as stimulating the development of new programs.

As Senator Smith pointed out, existing materials are often difficult to acquire because they are cloistered within special interest groups or simply because of the cost of obtaining them in the massive quantities necessary.

A well-staffed clearinghouse to handle material on environmental education was supported by the group. They felt that it was imperative to cut down on the time and money now being spent on the search for appropriate materials by each group. One expert at the forum suggested that a mechanized communications network might be the key to performing an effective clearinghouse function.

The group also voiced a need for up-to-date lists of environmental groups and others with an interest in environmental education who might serve as resources. As one participant pointed out, "Groups and resources mushroom and die so quickly that an effective following

of their activities, and the preparation of mailing lists, requires a full-time investigation and verification staff."

Participants also stressed the need for more and better feedback between the state and local groups pursuing environmental education. Almost all asked to be informed of further activities of the Temporary Commission and expressed a willingness to participate in public hearings on specific legislation if that route were chosen in attempting to strengthen the state's role in environmental education. They also felt that public forums, which provided an opportunity for free and frank exchange of ideas and problems and which generated better understanding of the activities in the field, were of benefit and should be held on a regular basis.

Several participants felt that perhaps the best way for the Commission to serve the youth of the state would be to work for enactment of universal environmental education for all school children. Frank K. Knight, Jr., coordinator of environmental education for the New York Botanical Garden, suggested using an inter-disciplinary approach, that environmental materials can be introduced into the curricula of all the subject areas and required courses. "Since the basic subject areas are intended to equip the student to deal with nearly all aspects of life, and since environmental problems are increasingly affecting all aspects of life, it is logical that environmental concepts be a part of all subject areas," he said.

Knight felt that the purpose of environmental education should be to acquaint youth with environments, both natural and man-altered; the problems man creates by exploiting the environment; environmental problem-solving; and achieving life styles which diminish environmental impact. He suggested that a generic course in environmental studies or ecology would also be appropriate in intermediate and/or secondary schools.

Knight felt that the cost of achieving universal environmental education would be minimal if it were

introduced slowly at the time of normal curriculum revision. He recognized that it would cost more to implement it sooner.

He stressed that public funds should not provide grants to the few school districts clever enough, and usually wealthy enough, to write grant-winning proposals. "This only further rewards the already educationally advantaged," he said.

"Neither should public funds be expended to purchase and develop natural science or conservation centers in the name of environmental education," he added. "Conservation centers are important and should be developed, but they are only a small part of the formal educational experience."

APPENDICES

1. Interviews
2. Questionnaire for Interviews
3. Questionnaire for Forum

## APPENDIX I

The following are partial transcriptions of selected interviews conducted by Kristin P. Bergfeld, researcher/writer for the Commission, to explore the funding possibilities available for environmental education. While all interviews were conducted in New York City, the capabilities of the funding organizations often extend throughout New York State and even the nation. We present them here in question and answer form as source material to be used by those applying for funding for environmental education projects.

### LEVER BROTHERS

Public Relations director interviewed on February 13, 1973. The public relations department of Lever Brothers is concerned with consumer education regarding their products. It is also engaged in public affairs, community relations, urban affairs, public support, philanthropy and activities in the outside world which may affect business. The public relations department recommends policy to the company's management. It also explains the company's stand to the public.

Q. How does the company determine policies of corporate giving?

A. The corporation puts a certain amount of money each year into the Lever Brothers Foundation, established on a budgetary basis, on the recommendations of the company's contribution committee. The budget is determined on the basis of requests which were reviewed the previous year. Approximately $200,000 per year is made available, most of which goes to an established institution where Lever Brothers' own people can direct the work.

Q. What do you look for in an environmental group when they request funding?

A. We have received surprisingly few requests from environmental groups. While we don't actively seek these proposals, we encourage projects with potential

when we see them. We are always talking to environmental groups especially in relation to the phosphate problem. We had expected more funding requests than we have received.

Q. Why do you feel there were so few applications?

A. Student programs on campuses have waned, the leadership has passed onto other jobs. The original Earth Day leadership has moved on. We have often given small grants -- $500 from other budgets in the corporation -- to environmental groups. We would like to be more in touch with campuses, yet those who provided the spark to the environmental movement have graduated. The mass drive is gone. It's hard to identify the targets. Past students have initiated programs in environmental education in almost every educational institution in the country -- inaccurate as some of it may be. These institutions look to us for materials and information. This we can provide.

Q. How do you decide whether this approach has brought the kind of relevant teaching and professional training you are concerned about?

A. Through personal connections with the teachers and through our speakers bureau. There are three things we want to contribute -- time, money, and talent. We must do this in concert with other public and private institutions such as the Economic Development Council.

Q. Do you think the environmental education field should be institutionalized?

A. Institutionalizing does not mean just retitling the courses that currently exist. More is needed on the teacher education level.

The State could direct this field by employing the advisory authority mandated by law for the Governor's office, rather than set up another Advisory council. The responsibility has to be shared by State and Federal governments. To inform citizens is a tangible and necessary role of state councils. It would be helpful to business as we never know where to put our

responsibilities. Business organizations like the Chamber of Commerce can provide a sense of direction. Industry can be its own watchdog to the extent that we draw on our friends and the National Information Board as a check-up.

We hope to use our money for seed money, not available through the public sector. Business has done this in fields where the government has later come in. Industries can pioneer at the pilot level. While we are little fellows in the business, we like to find a hot program to fund, with our trade associations and colleagues, as a test pilot. It is a test for us, and gives the funded group some further basis for strength to show that Lever Brothers took a risk on them.

EQUITABLE LIFE ASSURANCE COMPANY

Interview with John Pulsipher, Manager of Corporate Support, Equitable Life Assurance Co.

Q. What is your title, and what are your major job responsibilities?

A. My title is manager of corporate support. I report to the officer in charge of all corporate giving to get clearance on major programs and on our trade association dues, which I have charge of spending. I take charge of the $1.5 million we have in our budget to give away. Most of this money is within the company's foundation. I make presentations to the Board recommending a pattern of spending for the entire year in all areas. In the environmental area, we have four major categories: Community services, (400 United Funds) Education, primarily higher education; urban affairs and equal opportunity; and health, in which we include the environment as a sub-category. We don't have things separated out in terms of environmental education. We do not give as much as we feel we should now to the environment, but in relation to our competitors, we are giving a far higher percentage to the field. We do not determine whether or not an environmental group is educational or not. We are interested in population growth, again in the field of health.

Q. What are your thoughts on the definition of environmental education?

A. I would be interested in hearing what it is, but we have no working definition or priority.

Q. How, then do you select an environmental group for your funding?

A. Generally we look for national corporations as we are a national corporation. We also consider N.I.B. reports, as a highly indicative index of what groups are like. In our screening process we are concerned with potential picketing, the character of the people involved, IRS status, mpact of programs, degree of success in meeting stated objectives. Yes, we begin with a group that is well-established, but we also look for innovative programs. We don't just sit inside the office and reject 90% of the proposals that come in. We have tried to seek out programs. For instance, in drug education, we early set out to fund situations that would meet our corporate need, as the field was important to business through hiring ex-addicts, providing in-service training, and so forth. We have lead the field here.

Q. How do you evaluate programs you fund?

A. We look to see if stated objectives are met. Also what further plan of operation is. We caution against rapid expansion. We look for slow, orderly expansion. We are now trying to systematize evaluation and develop a measure of the selection process. We currently rely on annual reports, status reports and conversations rather than the more systematic approaches. Our budget is expanding. We can go about things in a different way.

Q. Should there be a better definition of environmental education?

A. From the view of the company, a precise definition is more specific than we would need. But I see the state taking on these roles: Helping us select the best environmental education groups; we feel the whole movement has been fragmented and lacking in coordination

We have been holding out thinking that the field should become more coordinated before we give more to it. We would rather give $50,000 to one group than $1,000 to 50 groups. Further we cannot fund many local groups in environmental education. We would rather fund a national starter group that we have confidence in. We do not now have a specific interest in environmental education, though maybe we should. We feel we need more environmental education ourselves as a corporation.

Q. What role should the state play in funding and in directing the development of environmental education?

A. The federal government is doing the clean-up job. I have not given any thought to what the state should do. Yes the state could be helpful to us. As a watchdog on groups, an outside verifier on groups for us. Also as an examiner of the flow of information that is turned out. We do not know what is accurate information. We'd like to fund groups that build leaders in the field. We need an independent reading, as from the National Urban Coalition. It should be documented that we need environmental education.

FORD FOUNDATION

Interview with Janet Koch, assistant program officer for Resources and Environment, Ford Foundation. Over four years, beginning in 1968, we have had a program of grants to schools. We have given away $2 million to nine organizations in that time.

Q. What kinds of schools usually get your support?

A. We like to work directly with schools that already have the personnel or an environmental educational resource center such as Wave Hill Center. We facilitate current programs moving in new directions. We do not pay for operating expenses but for enriching the potential of the program. At the time of our grants (3 and 4 year grants) there really was no other source for environmental education funds.

Very often we would have a few people with teacher advisory programs who could influence more people. This was usually done in connection with

teachers colleges. We are very interested in these programs and in the teaching materials they generated. Yes it is a criterion that teacher training be an integral part of a program we fund. At this point we cannot take a stand on required in-service credited courses for teachers. That may be a role for the state.

Q. What is the future of funding for environmental education from the Ford Foundation?

A. There was a very conscious decision within the foundation to terminate the program. We had other priorities. The Foundation felt that we had already made a sizeable commitment and that we had done so before others had. It also felt that it was important to actually get down to the nuts and bolts of cleaning up rather than just providing informational education.

Q. Is Ford waiting to see if the field becomes more professional and institutionalized?

A. There is no thought now being given to further commitment to environmental education programs. Our giving is considered completed.

Q. What kinds of programs are important to you now?

A. The degree of teacher participation is important in our educational programs. Teachers did feel that the children experienced educational change. Yet, this is the approach of educators, not of quantitative input-output ration on environmental action. We at Ford, think of these nine pilot programs as experiments in education, not environmental changes. Because it is a small group we can easily generate dialogue and reflection. We are concerned with the differences in the impact of the programs on children from different social backgrounds.

Q. Then you are trying to define environmental education as educators?

A. Yes. That was the thrust behind these programs, not to teach ecology to youngsters.

Q. Is there a need for educators to define the field as educators?

A. Yes. Behavioral change. New techniques that touch on how children determine attitudes relating to each other. Moral education. How you react to your immediate surroundings. These must all be incorporated into the definition of environmental education.

Q. How do you see the State's role in environmental education.

A. Government has a role. I would rather not get into that too much. Yet it would be helpful if there were a council on environmental education. I cannot comment on legislation. Major problems come from the lack of federal support. The best way to implement these programs is in the schools, not in voluntary organizations, or after school activities. Funding should go to school programs.

ROCKEFELLER FAMILY FUND

Interview with Harold Snedcof, Rockefeller Family Fund. He said that the Rockefeller Family Fund has just begun a program in environmental education called Arts and Public Aesthetics. We will spend about $100,000 in this area in 1973. My responsibility is to investigate efforts in that field and to present them to our trustees. I see us more concerned with the built-up environment than the natural environment. I see us more involved with projects that have to do with awareness of environmental problems, than with specific remedial action, construction or demonstration projects. I do not see us in the "bricks and mortar business". I see us concentrating in three areas: research about the urban environment. By that I mean, projects which seek to define how urban spaces are used by people, not in theory, but in practice. This has a lot to do with the theory I have that often architects and planners are not really sensitive to the facts of how people use the space and designs and that by having such real information you can have a better planning and design process.

Secondarily, I see us involved in encouraging people at schools of architecture and education to develop courses for environmental education at their colleges. Thirdly, we are concerned with what you might call "exceptional individuals" who are thinking about environmental education. These range from people who put together "Whizz Bang City" in Woodstock last summer to a guy named Steve Cohn who did a playground in Baltimore. We are funding people who have a leadership role in a college or community institution.

Q. How important in replicability in selecting your projects?

A. That is the great ideal. I think that the state of environmental education is in a very primitive state. This is especially true for environmental education that is not conservation oriented. So I almost think that you plant a lot of seedlings and some survive, some you transplant. I see environmental education in the seedling state. So I don't know about replicability. It's really a question of communication rather than evaluation at this point. Getting people to talk with each other, to interact. I do not believe in model programs. We hope to set up this kind of interacting information for those interested in emulating projects we have funded. I do not know if they will, but there is hope. I have told our trustees that I want our fund to bring together those grantees once or twice a year to get to know each other first. It is a responsibility we have.

Q. Do you feel your methods of selection are adequate?

A. I need more information. I need to know how people are defining environmental education. How are they defining negatively the absence of the environment that would please them? I cannot yet talk about measurable positive steps that would make an environment a better place.

Q. Do you apply any outside model for evaluating or do you rely on conventional techniques?

A. I try to visit each project and keep in touch on a monthly basis. I also try to keep in touch with people who are funding projects. I try to use my own screening and evaluation techniques in cooperation with colleagues. Most of the most effective trouble shooting work gets done this way among fields in private foundations.

Q. What is the proper role for the state in environmental education?

A. I think the primary role of the state should be information sharing, through a team of circuit riders to go around and report, a yellow pages approach to what's happening and incentive grants programs. The state university is a fantastic resource.

APPENDIX II

QUESTIONS FOR ORGANIZATIONS INTERVIEWED
FOR NEW YORK CITY CONFERENCE

(Record the answers of each person interviewed on a separate sheet using the letters and numbers to identify the questions.)

A. 1. The date and time
2. The interviewee's name
3. His organization
4. His title
5. A brief job description

B. Concerning the current role of your organization in environmental education:

1. What kinds of environmental education programs do you support?
2. What kinds of support do you provide?
3. Is there a particular group of people that you normally work with?
4. How important is replicability to you?
5. Do you avoid funding a program that other organizations might support?
6. Do you feel that someone should take the leadership in defining the nature of environmental education and if so, who?
7. Finally, are you satisfied that your selection process does a satisfactory job of insuring that the best programs are funded?

C. We're particularly interested in evaluation:

1. What evaluation procedures do you employ?
2. In deciding whether to support an applicant with whom you have worked before, do you rely more on your evaluation of his previous work or on the contents of the particular proposal being considered.
3. When you have supported a few similar projects and are considering a major investment in the area, how important is your evaluation of these projects already undertaken?

4. How do you feel the evaluation process can be improved?

D. Concerning the nature of environmental education:

1. What does the term mean to your organization?
2. Do you see the nature of environmental education changing in the future?
3. Do you see your organization's role in supporting environmental education changing in the future?
4. Do you expect a change in the amount of money available for environmental education from your organization to change in the future? If so, how and by how much?

E. Finally, what recommendations do you have for people applying to your organization for support for environmental education programs?

REGISTRATION FORM - please return to the registration desk

PUBLIC FORUM...FUNDING ENVIRONMENTAL EDUCATION
NEW YORK STATE SENATE - - -CONSERVATION COMMISSION

FEBRUARY 23, 1973

Name _____ Address _____

Title _____ _____
(Brief description of role)

Organization _____ Tele.# _____

Kindly indicate your remarks on these questions. This meeting is not a public hearing, but is a forum, to enhance dialogue, and identify issues for further exploration by the Commission and the participants. Should a Public Hearing become necessary, please indicate the degree of your interest and ability to participate.

1. What are your primary concerns for environmental education? (audience, approach, rationale)

2. What environmental education issues need to be studied more thoroughly and acted upon?

3. What is your overview assessment of the field at this stage?

4. What role might the New York State Legislature assume?

5. Why is the Legislature particularly appropriate for this role?

6. Further comments.

Thank you for your interest and valuable comments. We anticipate further contact with you.

Cordially,
Kristin P. Bergfeld
Researcher, Writer with the Conservation Commission

# SOUTHERN TIER CENTRAL REGIONAL PLAN

# FOR

# ENVIRONMENTAL EDUCATION

March 23, 1973

PREFACE

A Southern Tier Central Regional Plan for Environmental Education is submitted on this date to Senator Bernard C. Smith, Chairman, and the members of the State of New York Temporary State Commission on Youth Education in Environmental Conservation. This document is in two sections, the first being the formal report to the state Commission and the second an appendix of background material and supporting data; additionally there are separate attachments to the appendix of two special newspaper editions that recount the June 23, 1972 flood in the Southern Tier.*

March 23, 1973
STEERING COMMITTEE

Robert D. Badertscher, NYS Electric and Gas Corp., Elmira
Dr. Richard Ek, Chemung Valley Earth Action Committee
Dr. Albert E. French, general public, Avoca
Clay Granoff, Thatcher Glass Manufacturing Co., Elmira
Mrs. Louis Gyr, general public, Bath
Mrs. Ruth S. Lynch, East High School, Corning-Painted Post School District
Theodore W. Markham, Steuben County Cooperative Extension
Glenn O. MacMillen, Chemung County Cooperative Extension
Miss Patricia E. Nixon, junior, Elmira Free Academy
William Peters, Watkins Glen Chamber of Commerce
Dr. Joel M. Rodney, College Center of the Finger Lakes - Cornell University Human Ecology Project, and Elmira College
L. Charles Rowland, Schuyler County Cooperative Extension
Rudolph Schneider, Steuben County BOCES
Bruce E. Schwartz, College Center of the Finger Lakes, Corning
Mrs. Chari Smith, general public, Painted Post

* Only the formal report to the Commission appears here.

SOUTHERN TIER CENTRAL REGIONAL PLAN

FOR

ENVIRONMENTAL EDUCATION

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A SOUTHERN TIER REGIONAL FORUM
ON ENVIRONMENTAL EDUCATION

February 1, 1973

Elmira College, Elmira, New York

Sponsor: Temporary State Commission on Youth Education in Environmental Conservation. Senator Bernard C. Smith, Chairman

9:00 a.m. Welcomes: Dr. Jerome P. Whalen, Provost, Elmira College
Senator Bernard C. Smith

9:30 a.m. An Environmentally Enlightened Citizenry? Keynote address, Dr. John A. Custafson, Commission Vice-Chairman

10:00 a.m. WHAT'S HAPPENING? Resumes of current regional activity in environmental education presented by these spokesmen, then augmented and discussed by all.

Education

Dr. Daniel B. Sass, College Center of the Finger Lakes & Alfred Univ.

Robert Drabkowski, Science Teacher, Watkins Glen High School

Labor

Gerald W. Tompkins, President, Local 313, Internat. Union of Electrical, Radio and Machine Workers, AFL-CIO-CLC, Painted Post

Local Government

John C. Gridley, Chairman, Chemung County Board of Supervisors

Citizen Groups

Mrs. Ruth S. Lynch, Chemung Valley Earth Action Committee

Conservation

Arthur B. Flick, Jr., Regional Forester, NYSDEC, Bath

Youth

Patricia E. Nixon, Class of 1973, Elmira Free Academy

Business/Industry

Dr. Roy S. Arrandale, Executive Vice President, Thatcher Glass Manufacturing Co.

11:45 a.m. Buffet Luncheon

1:00 p.m. WHAT SHOULD BE HAPPENING? Meeting in four groups, identify needed programs and resources. See details on attached page.

2:00 p.m. Reports from four groups. Discussion.

3:00 p.m. Is Regional Coordination a Need? Dr. John A. Custafson.

3:15 p.m. WHAT CAN WE DO TO MAKE IT HAPPEN? Discussion of regional needs; opportunity to make a commitment to the challenge ahead.

4:00 p.m. Adjourn.

# INTRODUCTION

A housewife felt that it was time to voice her concern about the environment:

> "If we have to wait for our children to start to become environmentally conscious in the third grade, it is too late."

She was one of 201 people who came together at a public forum held February 1, 1973 in Elmira, New York on the campus of Elmira College. That forum was one of six that the Temporary State Commission on Youth Education in Environmental Conservation sponsored across the state in January and February of 1973. A major purpose of the forum was to take steps to bring into being, for the region and the state, total community involvement in realizing a comprehensive approach to improving the quality of our environment <u>through education</u>.

At the forum, 85% of those present lived or worked in the Southern Tier Central region (84 persons from Chemung County, 54 from Steuben, and 20 from Schuyler; others came from neighboring counties). An afternoon series of discussions drew together about 40 in the education sector, 28 in business and labor, 40 in citizens groups, and 32 in conservation and local government.

At the request of the State Commission, those individuals active in planning the forum were requested to continue as a steering committee. Its responsibility was to prepare a Southern Tier Central Regional Plan for environmental education.

Contained on the following pages, drafted within a short period of time, are statements of goals for the various sectors identified above; a status report on what is happening in environmental education regionally (and which is only partially complete due to lack of time); a catalog of regional needs; and examples of possible regional activities.

At the heart of this document is the section on goals. These statements point the way for initial responses from the region toward improving environmental education.

A regional approach to environmental education for the Southern Tier Central counties of Chemung, Schuyler and Steuben could not be more timely than it is now - nine months after the onslaught of Hurrican Agnes in the Southern Tier on June 23 of 1972. Some of the data used in this report, compiled prior to the flood, needs to be revised. To the reader who discovers omissions or incomplete data, an apology is due.

## SOUTHERN TIER CENTRAL:

## ITS LAND AND PEOPLE[1]

Chemung, Schuyler and Steuben Counties form the Southern Tier Central Region. Chemung has the smallest land area but the largest population; Steuben, which is twice the size of the other two counties, is only second in population.

Of the 8 urban areas designated in New York State's 1990 development plan, the smallest is the Elmira/Corning locale. Its settlement has been confined to the valley floors and river plains by the hilly geography: Elmira and Horseheads are along the Chemung River and Corning is at the confluence of the Chemung, Tioga and Cohocton Rivers.[2]

Population by Counties, 1970

| | Population | | | Per cent Total | |
|---|---|---|---|---|---|
| | Urban | Rural | | Urban | Rural |
| Chemung | 89,444 | 12,093 | 101,537 | 88.1 | 11.0 |
| Schuyler | 6,525 | 10,212 | 16,737 | 39.0 | 61.0 |
| Steuben | 56,385 | 43,161 | 99,546 | 56.6 | 43.4 |
| Regional Totals | 152,354 | 65,466 | 217,820 | 69.9 | 30.1 |

1. Abstracted from Three Rivers Development Foundation, Inc., Population, Economy and Housing: Southern Tier Central Region, Sept. 1972; and Southern Tier Central Regional Planning and Development Board, Existing Land Use: Southern Tier Central Region, Dec. 1972.

2. NYS Office of Planning Coordination, New York State Development Plan - I, Albany, January 1971.

General landscape of the region is predominantly rural. About 96% of the land is classified non-urban (wooded areas, farmland and open space). In Steuben County, less than 3% of the land is in urban use - more than half the remainder is forest and brushland. Ten per cent of Chemung County's land is intensely developed urban area, much of it residential, but more than half the land is farmland and wetlands. Recreational facilities (Watkins Glen State Park and Grand Prix Race Track) account for 1½% of Schuyler County's 4% of land in urban use; the remaining 96% is about evenly divided between forest/brushland and agriculture/wetlands.

Land Use in the Region, 1970

| Urban Use | Sq. Miles | Acres | Per cent Total |
|---|---|---|---|
| Residential | 62.2 | 39,808 | 2.41 |
| Commercial | 5.1 | 3,264 | .24 |
| Industrial | 4.0 | 2,560 | .18 |
| Transportation, Commercial, Utilities | 3.2 | 2,048 | .15 |
| Cultural, Recreational | 13.4 | 8,576 | 1.09 |
| Total Urban Land Uses in Region | 87.9 | 56,256 | 4.07% |
| **Non-Urban Use** | **Sq. Miles** | **Acres** | **Per cent Total** |
| Forests, Brushland | 1058.3 | 673,472 | 48.92 |
| Agriculture, Wetlands, open space | 1016.7 | 650,688 | 47.00 |
| Extraction | 1.2 | 768 | .01 |
| Total Non-Urban Uses in Region | 2076.2 | 1,328,768 | 95.92 |
| Grand Total Land Uses in Region* | 2164.1 | 1,385,024 | 100.00% |

* Totals may not add up due to rounding figures to nearest tenth.

In 1970, of the 217,820 residents in the region, 45.8% were 0-24 years (dependent children and college students or those just starting in the work force); 43.1% were 25-44 years (the main work force); and 11.0% were 65 years and over, or mostly no longer in the work force. Of the labor force in 1970, 86.2% was engaged in non-agricultural wage and salary positions (34.6 in manufacturing and 51.6 in non-manufacturing); 8.8% in all other non-agricultural employment and 5% in agriculture.

Six "population concentration areas" housed most of the region's inhabitants in 1970. They were: Elmira area (94% of Chemung County's population); Watkins Glen-Montour Falls area (60.8% of Schuyler County's); and the areas of Corning (35.6%), Hornell (20.0%), Bath (16.8%), and Wayland (3.6%) in Steuben County. As to the remainder of each county's population, it was dispersed throughout low density rural areas housing fewer than 250 people per square mile.

Population growth, according to projections, is expected to be modest over the next 20 years - a 9% increase. Existing residential patterns will continue, in general: a slight change from population concentration areas to rural municipalities adjacent to urban areas is seen. One explanation of this shift is a change in life style - people tending to shift from urban orientation to open space, as a neighborhood criterion. Another is the expected completion of major expressways linking outlying to metropolitan areas (Southern Tier Expressway, Genesee Expressway). Here too, agricultural and open land will give way to urban usage. In fact, commuting is already an established pattern in the region, with more people entering the Corning-Elmira area daily for employment than leaving. No data are available on the expected transfer of open lands to industrial use by 1990, but trends suggest the possibility of such a change.

## REGIONAL GOALS

An overriding need for giving a sense of direction to environmental education was discovered as a result of the February 1 forum. Whatever the term - ecology, environment, eco-system - there are dynamic equilibria at work; these forces often may not be easy to isolate and study, much less find answers to. Specific regional needs are identified on pages 214-220 but when so many areas need attention, it is easy to run helter-skelter after this need and that, efforts perhaps duplicating each other or working toward different ends. If a balance is to be reached, that needed "sense of direction" must come from an overwhelming awareness of goals that are realistic and attainable. To that end, this section on regional goals is the major part of the Southern Tier Central report. All the goals are presented according to the sectors which came together for discussion at the February 1 forum - education, business/industry/labor, citizens groups, conservation, local government. Sometimes the goals are similar for several sectors, while other sectors see some of their goals as being distinctly oriented to their field. Yet, as in an eco-system, they react and bear upon each other, and require a total community involvement.

EDUCATION:

To establish and fund an environmental education council;
To create an ecologically sensitive community through education:

Recognize and answer the need for esthetic and healthy physical surroundings for optimum human functioning

Quote: We should and will have homemakers who realize that their children need healthy communities for an adequate quality of life - homemakers who even ponder the meaning of the term "quality of life."

Develop strong pathways between schools and the community

Redesign scheduling and curriculum in local schools

Recognize and remove outmoded patterns of rigid defensiveness among professional educators, industrialists and government leaders

Quote: We should and will have a society which realizes that the "highs" in individual lifetimes come from creating or preserving something beautiful; a society whose sensitivities are outraged by the destructiveness of the unhealthy by-products of our time rather than tranquilized to numbness by its ubiquity.

Adopt the concept that good ecology is good economics;

<u>To make environmental education training available to all teachers</u>:

Offer in-service course work for graduate credit and professional advancement to teachers and industrial personnel

Implement evening programs to give free college tuition for teachers who supervise undergraduate environmental studies interns in their classes

Quote: Teachers must be attuned to relating heretofore unrelated fields of study.

Establish courses that will allow for exchange of knowledge and philosophy

Find ways to interrelate areas of study;

To achieve cooperation among public schools, BOCES, continuing education and colleges and universities;

To have higher education provide a professional base for developing teaching techniques, cooperative research, in-service study and communication.

BUSINESS, INDUSTRY AND LABOR*

To contribute to the development of an environmentally enlightened citizenry, capable of;

Developing desirable and attainable goals with respect to environmental quality, along with the priorities for their attainment;

Determining the economic impact of environmental goals and solutions on community and region, as a requisite for decision-making;

Understanding the integral relationship of environmental influences which require examination of proposed solutions for their immediate effect on the environment beyond the immediate problem area.

To implement the broad goal, it is recommended that a committee on Environmental Education Resources be set up, composed of representatives of business and industry. The main objective of the Environmental Education Resources Committee would be to set up a clearinghouse for information and expertise. Specifically:

Gather from all available sources in business and industry, technical data on environmental matters, including economic impact studies

Obtain commitment from business and industry to supply personnel having expertise in all areas of environmental management

* Includes industrial and business firms, as well as agriculture.

Publish a catalog of Environmental Education Resources and make it available to the educational sector in the region

Provide a means by which members of the educational sector can contact the specific business or industry offering the educational resource desired

---

CITIZENS GROUPS

To establish an environmental education council that will receive state funding to undertake regional coordination of activities bearing upon environmental EDUCATION in all sectors;

To collect environmental resource information designed for public use (to include information, for example, on audio-visual materials, speakers, technical assistance, research data);

To improve and increase the publicity given to environmental concerns;

To inventory current resources - organizations, agencies, facilities, individuals and draft long-term environmental education goals for the region;

To cultivate public awareness of the need for understanding how to reason for proper and lasting solutions, and not to react to fear and scare tactics;

To form an independent group, technically competent, that can evaluate and react to environmental impact studies (perhaps this group could be part of a cooperative "think tank" designed to evaluate proposed solutions to environmental problems).

CONSERVATION

To look to voluntary interest-centered activity as an alternative to hierarchial mandates and the proliferation of government structures;

To help the more technically oriented agencies to understand that the disciplines of economics, psychology, sociology, ethics and humanities are relevant to environmental education (as an example, it appears that the notion of stewardship has helped cultivate positive attitudes toward improved natural resource management);

To cultivate a climate which will encourage conservation agencies, organizations, groups and individuals to continue to improve contributing roles in local and regional teamwork to increase public understanding of environmental problems and alternative solutions (linkage should be expected with any future regional environmental education council and regional personnel should be provided to support county based agencies);

To backstop the many community-based organizations and groups with people and educational materials from conservation agencies;

To provide referral information to the public, school systems, colleges, libraries and others on the role of various conservation agencies and organizations - at least those with community and referral responsibilities should be better understood;

To develop mutually supportive roles on the part of colleges, BOCES, schools, Cooperative Extension and others in carrying out informal education programs in community resource development, public affairs, natural resource conservation, home grounds and others which have environmental implications for both rural and urban people;

To encourage agencies with conservation planning responsibilities to let the public in on environmental impact statements and share knowledge of environmental alternatives and "trade-offs";

To increase the availability of environmental self-learning experience projects and demonstrations as presently utilized by 4-H clubs;

To improve the availability of various reference bulletins and other publications developed by Cooperative Extension, SUNY College of Environmental Science and Forestry, USDA and others;

To recognize and support the many opportunities to offer increased environmental education at summer camps sponsored by Boy Scouts, Girl Scouts, Campfire Girls, 4-H, NYS Department of Environmental Conservation, and others;

To continue to offer counsel to individual producers and landowners, groups and agencies as a means of identifying environmental problems and appropriate alternative solutions.

LOCAL GOVERNMENT

To encourage total community involvement and participation in environmental problems handled by local government:

Open Communication channels so that there is an exchange between government, education, industry, conservation and citizen groups

Increase contacts with news media

Clarify how things get done governmentally

Quote: The role of local government in environmental matters has grown appreciably in recent years;

To sustain high interest in environmental education:

Encourage the development of environmental education in local schools

Apply data and information from local government projects to courses in local schools

Emphasize the three C's of an environmental education program - Cause...Correction...Costs;

To emphasize the quality of the environment:

Adopt and enforce codes and other control practices

Effect guidelines for the proper management of natural resources;

To seek proper revenue sharing earmarked for environmental matters.

# STATUS OF ENVIRONMENTAL EDUCATION

At the February 1, 1973 forum, a start was made toward learning what is happening in the counties of Chemung, Schuyler and Steuben. The activities summarized here are separated according to education, local government, citizens' groups, business/labor and conservation - just as they were reported at the forum. While it was possible at the forum to identify the names of the institutions or organizations as shown in parentheses, it is recognized that there may be others also involved in similar activities. Also it is recognized that there are perhaps not only organizations but other activities that are missing from the inventory (some omissions are due, obviously, to the June 23, 1972 flood). As such, this summary should be considered only an interim report on the status of environmental education in the Southern Tier Central Region.

## EDUCATION

### Public Schools, Pre-School

Staff training and science unit's use of out-of-doors as resouree (Rural Child Development Day Care Center, Beaver Dams)

### Public Schools, Elementary

1. Introduction of courses or studies on third grade level (some school districts)

2. Field trips to Hector Land Use Area and other outdoor sites (Watkins Glen, Elmira, Corning)

3. Use of Tanglewood Nature Center for field studies (Elmira)

Public Schools, Secondary

1. Elective mini-courses of 5-10 weeks (Elmira)

2. Study of an ecology unit in Regents biology; lectures, labs, field trips

3. Modular scheduling of non-classroom activities (Hammondsport)

4. Field biology station as teaching-learning resource (Hornell)

5. Training for careers in conservation (BOCES Coopers Plains)

6. Development of 200 acres as a teaching-learning resource (BOCES Coopers Plains)

7. On-going student organizations such as Ecology Club (Corning East High)

8. Use of media software (all school systems); compilation and addition of pertinent library books (Elmira Free Academy)

Colleges and Universities

1. Technical services of faculties available to government, communities and organizations

2. Environmental courses open to the community as part of continuing education programs

3. (Alfred University)

   a. Undergraduate major, 4 year curriculum environmental studies

b. Field work in:
   1) Pesticide effects
   2) Recreational facilities
   3) Community planning
   4) Fisheries
   5) Stream and lake water quality

4. (Corning Community College)

   a. Courses in ecology, human sciences, urban geography
   b. Special environmental and pollution courses
   c. Division of Continuing Education, a resource for developing specialized courses and studies on topical issues
   d. Pond and section of 275-acre campus set aside for field study of physical and biological sciences

5. (Elmira College)

   a. Six-week ecology course for non-science majors
   b. Course that takes an historical approach to environmental crises solution - "Environmental Challenges from Stone Age to Space Shuttle" - in preparation
   c. Independent study analyses of Seneca Lake, primarily conducted in the spring
   d. Ongoing analysis of plankton studies at Seneca Lake
   e. Senior biology seminar, in preparation, to focus on environmental planning
   f. Arboretum for community use

6. (College Center of the Finger Lakes, Corning - a consortium of Alfred University, Cazenovia, Elmira and Hartwick Colleges)

   a. Operation of Finger Lakes Institute at Allen Point, north of Watkins Glen on Seneca Lake
      1) Two 65-foot research vessels for field trips, available to schools, organizations, agencies
      2) Lakeside laboratory at Allen Point field station

3) Courses for college undergraduates, qualified high school students, high school teachers, including limnology, fresh water vertebrates, environmental chemistry, plus, through cooperation of Hartwick College via CCFL, field biology and ornithology
4) Courses on earth science and ecology for secondary school science teachers
5) School year in-service studies in ecology for secondary school science teachers
6) One-day short courses on fresh water study for secondary school science teachers
7) Studies of Seneca Lake's southern end

b. Sponsorship of lecturers such as Paul Ehrlich, open to public as well as faculty and students
c. Task Force on Environmental Studies proposing the establishment of a clearinghouse on environmental matters of concern to the Southern Tier, and the development of a multi-disciplinary approach to environmental studies
d. Coordinated resources of CCFL and Cornell University for studying needs of people and matching needs to services of social agencies in three counties, undertaken as technical assistance for Southern Tier Central Regional Planning and Development Board

CONSERVATION

1. Cooperative Extension offices in Steuben, Chemung and Schuyler counties

a. Identifies environmental program resources
b. Provides numerous information bulletins concerned with environmental understanding and reports from environmental specialists
c. Offers professional staff assistance and expertise to local officials and planning boards
d. Conducts community programs open to public in environmental topics
e. Operates programs for youth
1) Conservation Field Days Program for sixth grade

2) Conservation workshops for elementary school teachers (grades 4-6)
3) Mini day courses in environmental studies
4) Resident youth camps, environmental awareness programs
5) Day camp in temporary trailer courts after flood
6) Regional workshops for camp counselors in natural sciences
7) Camps for teenagers in wilderness areas
8) Teen conservation leadership camp, Arnot Forest
9) Pilot program teaching youth environmental awareness
10) Conservation projects in traditional 4-H clubs and community special interest groups

f. Conducts adult programs
1) County and regional Community Resource Development programs - workshops, seminars for officials and general public
2) Support and coordination work with social agencies
3) Retired Senior Citizen Volunteer Program
4) Expanded Nutrition Education Programs for low income families

2. Various agencies as resources for environmental education

a. State Department of Environmental Conservation, including Bureau of Forest Management, Bureau of Wildlife, Bureau of Fish
b. Soil Conservation Service, USDA
c. Agricultural Stabilization and Conservation Service, USDA

BUSINESS/LABOR

1. Seminars for businessmen and others in energy conservation (New York State Electric and Gas)

2. Seminars for industry engineers and executives (Corning Glass Works)

3. Environmentally oriented training/retraining for engineers (New York State Electric and Gas)

4. Union's support of the need for labor and industry to work together on environmental affairs

5. Seminar-type sessions a part of plant tours (Thatcher Glass)

6. Waste problems and solutions a part of plant tour (Taylor Wine)

7. Base line studies of effect on land and water (local industry)

8. Personnel available for schools (Corning Glass Works)

9. Individual contributions, such as two-volume compendium on stack emissions (Dr. Roy Arrandale, Thatcher Glass)

LOCAL GOVERNMENT

1. Environmental Management Council, advisor to County Board of Legislators (Schuyler County)

2. Council of Governments, elected officials of municipalities - coordination of concerns (Chemung County)

3. Chemung River Basin Planning and Development Board, resource for case study data

4. Chemung County Planning Board, resource on visual pollution

5. Genesee Regional Health Planning Council, environmental health services (Elmira)

6. Solid Waste Study of Steuben and Allegany Counties, resource data

7. Chemung County land purchases, preservation of green belt areas

8. Sources for data and case studies (Chemung County)

   a. Air pollution monitoring control system
   b. High heat incineration
   c. Sewer district
   d. Water Quality Control Board

9. Southern Tier Central Regional Planning and Development Board

   a. Data for study on "Population, Economy and Housing," and "Southern Tier Region Functional Planning Report: Water and Sewer Facilities, Recreation and Open Space"
   b. Regional channel for funding
   c. Conferences environmentally important, e.g.:
      1) Housing and the Environment
      2) Recycling
      3) Community Development
      4) Industrial Development

CITIZEN GROUPS

1. Recycling Symposium (environmental action groups)

2. Forum on flood plain management (environmental action groups)

3. Newspaper recycling proposal to Corning City Council (Ecology Club, East High)

4. Solid waste study group (League of Women Voters)

5. Regular walks and trips to nature centers (Elmira Outing Club)

6. Resident youth camps (4-H, Scouts, Campfire Girls, church youth groups)

7. Environmental concern is one-third of total program of the Southern Tier Girl Scout Council

8. Community awareness - citizen participation: project grant awarded under federal Environmental Education Act (Southern Tier Girl Scout Council)

## REGIONAL NEEDS

As a result of the February 1 forum, 70 regional needs have been identified. Compiled in this section is a summary of the chief concerns as to what should be happening. While these concerns are grouped just as they were at the February 1 forum for discussion purposes - education, business and labor, citizens organizations and local government and conservation - it should be recognized that the needs have necessarily no boundaries and cross over from one sector to another. These needs should be interpreted as a check list for further regional action.

### EDUCATION

#### Curriculum Change and Organization

1. Add environment education to the curriculum in all grades K-12, without a mandate from the State Education Department.

2. Rewrite textbooks (produced inexpensively) - ideally on a regional basis - emphasizing the environmental impacts of technological changes.

3. Inform local Boards of Education of the need for them to provide leadership (instead of the State Education Department).

4. Reeducate the educators to the urgency of teaching environmental education.

5. Avoid spending too much time on nature walks in this fast-moving technological world, <u>without</u> classroom studies as background.

6. Expose primary-age students to nature out of the classroom to stimulate consciousness of the environment.

7. Increase the studies that focus on local situations, using problem-solving techniques.

8. Institute flexible scheduling that will provide time for field trips (half day or more).

9. Overcome scheduling problems for use of facilities of limited access.

10. Have smaller classes.

11. Determine the regional need for introducing a two-year associate degree in environmental technology.

12. Expand undergraduate college courses and use them as models for adult workshops.

13. Use existing resident camps as outdoor classrooms.

14. Interpret the environment as part of the curriculum, in terms of political process.

Resources Outside of School

1. Assess the relationships that could be developed for pre-school children to insure that environmental awareness begins in the home.

2. Inventory the facilities in the region that can be used for field trips and outdoor laboratories.

3. Compile a file card index of agency services available for teaching environmental education (include limitations as to frequency of usage).

4. Originate types of practical experiences, referenced through an "environmental center," whereby the problems in regional industry and business are part of the curriculum.

5. Utilize cooperative "think tank" to develop learning models that will involve students in problems faced by government, labor, business and environmentalists.

6. Develop and use lands near schools for study via interpretive trails.

7. Aid student organizations, e.g. Elmira Outing Club, to raise funds and to locate qualified adults for field experiences.

8. Identify and incorporate "action aspects" in school courses to involve young people, in other ways besides picking up litter along highways.

Teaching and Reeducation

1. Teach people to become aware of nature-technology-compromises.

2. Emphasize cause and effect relationships.

3. Use team teaching of biology, social studies and economics for instruction in environmental citizenship.

4. Establish adult education classes on a coordinated regional basis.

5. Work through teacher associations to request in-service workshops for environmental education.

BUSINESS/LABOR

Community Interaction

1. Develop a community service course where industry, business/labor and education can pool resources and knowledge.

2. Set up people-to-people contacts instead of letting advertising carry the message for business and industry.

3. Identify situations for case histories that can be problem-oriented studies or field experiences for schools and colleges.

4. Encourage personnel to add their expertise to regional forums, local seminars, etc.

5. Continue to promote interaction between labor and management in environmental causes.

6. Use multiple approaches to eliminate the credibility gap between industry, business/labor and the public.

7. Tell the story of agriculture and agri-business on the use of fertilizers and pesticides.

Internal

1. Raise the question of "what might be done differently?"

2. Organize and catalog materials that industry has available for educational purposes.

3. Display environmental education posters in industrial plants; localize the messages.

CITIZENS GROUPS

Community Interaction

1. Take personal interest in curriculum changes in public schools.

2. Call for school boards, as decision makers, to be aware of environmental concerns and develop "eco-sensitivity."

3. Vote for strong governmental leadership that cares about environmental education.

4. Upgrade the coordination of community agencies in and among the three counties.

5. Draw upon all resources to draft an environmental ethic for the region.

6. Create an independent group, technically competent, to evaluate solutions coming from various governmental agencies.

7. Identify resource people in the region who can give perspective to large projects, such as the flood rebuilding of downtown Elmira.

8. Teach how to reason for proper resolutions to environmental problems.

9. Search out sources of funding for local or regional activities, combining resources of colleges, conservation agencies, etc.

Communications Resources

1. Form - rapidly - a coordinating vehicle for various sectors, i.e. citizen groups, government, education to sustain communications.

2. Inventory all governmental agencies, educational resources and citizen organizations in the region.

3. Compile the names of experts in the region who would be the nucleus for a speakers' bureau.

4. Put into operation an "environmental hot line" to supply data, coordinate activities, and share information in the Southern Tier.

5. Improve and increase the publicity given to environmental concerns.

6. Facilitate the accessibility of educational materials to all sectors.

7. Allow citizen groups to use the software and television facilities of school districts.

8. Arrange for audio-visual materials to be readily available.

9. Seek out and catalog ideas on how to reach parents (of preschoolers as well).

LOCAL GOVERNMENT/CONSERVATION

Community Interaction

1. Improve communications in environmental matters.

2. Draw together, on a continuing basis, the total input and the interactions of all areas to make "balanced decisions" possible regionally.

3. Identify, and utilize, those people who have the "picture of the total relationships" between man and the natural world.

4. Apply data and information from local government to courses taught in local school systems.

5. Improve, or initiate, the exchange of information and personnel among conservation agencies and education.

6. Utilize agency personnel as resource people for courses taught in local school systems.

7. Increase the contacts with news media; improve the educational quality of news releases from agencies.

8. Take steps to assure a common-base understanding of management of upstream areas as well as the recognized flood plain in the Southern Tier.

9. Implement watershed ordinances via an inspector's office.

10. Recognize the time requirements to accomplish controls such as the treatment of solid waste.

11. Have agencies understand the needs of various interests, such as campsite owners by cosponsoring a workshop.

Internal

1. Offer basic environmental training to governmental employees so that they will expedite action.

2. Train government officials and staffs as to what their agencies have done, are doing and can do in environmental management.

3. Train officials in the basics of ecology, biology and chemistry.

4. Clarify governmental power structure and the "costs of things."

## EXAMPLES OF FUTURE ACTION

A major purpose of this section is to give examples of possible regional action. A second purpose is to identify several ideas that perhaps have not surfaced elsewhere and may be models for the state. Where possible, the organization and time requirements for each of the activities is given. They are to be interpreted as starting points toward community involvement. They are not necessarily connected; if these examples do anything, however, they point to the potential that exists for initiating one activity that could lead to others and, along the way, find a connection. As to further cooperation within and among various sectors identified in this report, the registration list for the February 1 forum is an initial working base; it identifies organizations and people to contact.

## STATE COMMISSION

Whatever the future of the State Commission, it is proposed that the members of the Commission be accessible, in some manner, to the people of the Southern Tier as a resource for further developments that the Southern

Tier undertakes in committing itself to total community involvement.

JUNE 23, 1972 FLOOD

A comprehensive case history of the June 23, 1972 flood should receive priority. What is learned in this study would be a once-in-a-lifetime education on the environment for the people in the Southern Tier Central Region.

CLEARINGHOUSE

1. An environmental education center for the region could be formed in the immediate future. Of all the proposals presented at the February 1 forum, this one was cited most often. Within the center would be a clearinghouse for personnel, facilities, resources, an information center and a service for developing workshops. One of the chief reasons for having such a center, perhaps, would be that people would know they had one place to turn to for information bearing on education.

> Quote: "Regional cooperation is essential! Think of the taxpayer!"

2. Seminars or other communications methods should be used to assist specific groups such as clergymen, lawyers, building contractors and realtors in comprehending regional developments that can impact on life styles and attitudes toward the environment.

NEWS MEDIA

An awareness of the news media's role is underscored throughout the February 1 forum. According to one observation, the news media role is "reporting," not "educating." Steps should be taken immediately to

increase the coverage that news media give to the environment. Workshops for reporters could be held, as a first step in having the media be fully eco-conscious.*

SCHOOLS AND COLLEGES

1. A partnership of agencies (conservation and government) and education could result in studies and findings that have multiple uses, such as agency planning, data for local reports over cable TV, background for newspaper reporters. As of this writing, for example, a teacher at Corning East High School is preparing to have students do research on eight alternatives to energy sources; their findings can be shared in reports to other students, parents and the general public via cable TV and perhaps a Parent-Teachers Association meeting.

2. A new kind of textbook for the schools should be written - one that includes local or regional data and can be updated easily and inexpensively. Rationale for this textbook?

> Quote: All I can do is teach what a good environment is and what is bad. I don't know what all your (industry's) problems are, or how long it should take to overcome them. (teacher)

> Quote: We have the water, heat budget and climatology of a local area known... An inventory will reveal what is available and then the mechanism can be developed for getting the information out.

3. College and university voluntary cooperation should be continued and expanded. As an example,

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* See Stanford University, Mass Media and the Environment, Vol. I, "San Francisco and Monterey Bay Water Resources," September 1971.

College Center of the Finger Lakes and Cornell University are collaborating in a study that will lead to matching the needs of the people in the three counties to the services of appropriate agencies. Some 1,500 families, at the end of the study, will have identified needs that affect the life style and, in turn, attitudes toward the environment. All the data will go to agencies to aid in assessing their services for the future.

4. Conservation Field Days, now held for sixth grade students, could be expanded to other grade levels. And, the days could be an example for initiating other types of one-day field experiences that would require cooperation of state-county agencies and school district.

INDUSTRY

1. A manufacturing company proposes that students do the research and write the material for an employee booklet that tells the company's story on its pollution controls, etc.

> Quote: "We need experiences that make an environmental curriculum come alive."

2. In-plant tours that explain waste treatment and other pollution controls should continue. One proposal is for industry to collaborate in working out new or different approaches to in-plant tours.

> Quote: "How can we (industry) improve the use of tours as a form of education?"